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FOR THE YEAR
1928

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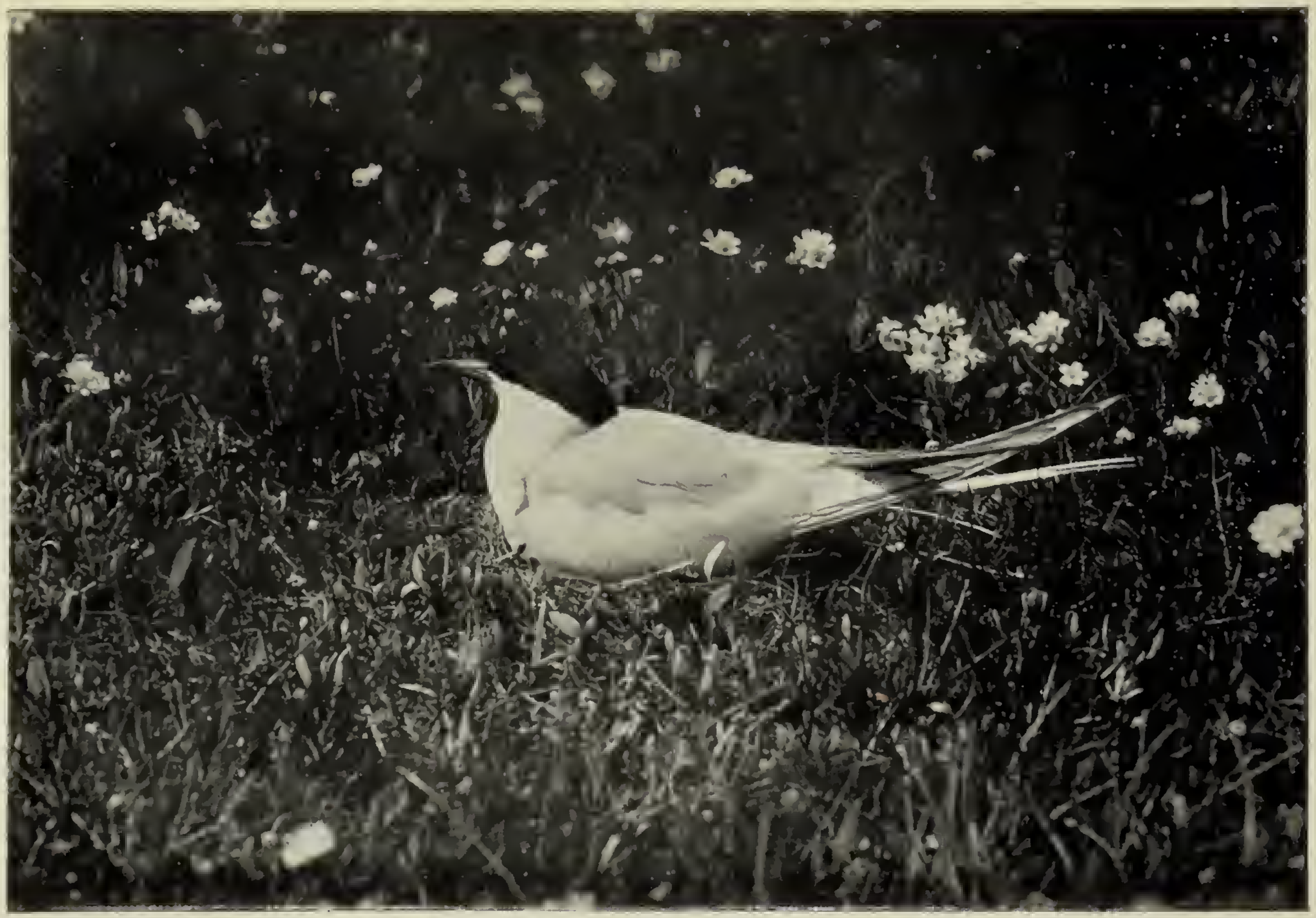

COMMON TERN ON NEST
Colne. June, 1926

From "A History of the Birds of Essex" by kind permission of the author.
W. E. Glegg, F.Z.S., M.B.O.U.

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BRITISH MUSEUM NATURAL HISTORY

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The Thames as a Bird-Migration Route

By William E. Glegg, F.Z.S., M.B.O.U.

President's Address, read to the Society on December 4, 1928.

At one stage of our knowledge of the migration of birds there were, or appeared to be, two schools of students of the subject, those who believed that migration proceeded along a broad front and those who upheld the view that birds in changing their habitats from season to season, did so by means of what were described as routes. One of the greatest exponents of the broad front theory was the celebrated author of "Heligoland as an Ornithological Observatory". Gätke believed that migration was chiefly performed on a broad front, or migration-column, which, he postulated, in the case of species migrating to the west, corresponds to the latitudinal range of their breeding area, and in the case of those migrating southwards, to the longitudinal extent of their nesting stations. Continuing his argument he states that the view that migrants follow the direction of ocean coasts, the drainage area of rivers, or valleys as fixed routes, could hardly be maintained. Valuable as was the work of this celebrated student of migration, yet it was very obvious that he allowed his imagination too much freedom.

It is now generally accepted that routes play an important part in bird-migration. Dr. A. L. Thomson states that it is beyond doubt that certain general directions of flight are constantly followed by regular migrants, and that passage in some localities is more or less restricted to definite paths, which follow coast-lines or other features.

I have said that there appeared to be two schools of thought, for after all the direction followed by birds on a broad front is a route, for the front, however extended, must have its limitations. As Dr. Thomson points out there may be only one type of migration, between whose extremes, that is a movement along a wide front as opposed to a restricted passage as along a coast or river, there is probably every gradation.

Having introduced the subject from a very wide point of view, we must now examine it more closely, that is to say from the British aspect. Any remarks which may be made under this head, refer to the autumn migration. It is curious how little is known of spring movements, and although it is generally assumed that the routes followed are the same as during the autumn, the amount of evidence on which to base conclusions is limited.

The concensus of opinion supports the view that the great mass of migrants which visit Britain during autumn on their way south, follow the coast, and my own observations on the Essex coast are in conformity, but it is certain, judging from the birds that are recorded at inland sewage farms and reservoirs, even admitting that many of these are situated in river valleys, that there must be a certain amount of overland migration. Personally I incline to the view that the waders, which we see annually at the reservoirs, etc., are stragglers, from the main migration route, which follows the coast.

I hope that I have not blundered into a terminological inaccuracy in applying the term "route" to the Thames. It might have been more appropriate to have said "flight-line" or "fly-line". I am not altogether clear as to the distinction between these two types of migration, but if the latter terms connote "minor route," they would have been more suitable.

It is my intention to deal with the subject dispassionately, and I do not use the title as colours nailed to the mast to be defended at any cost, but as a platform from which a consideration of the subject may be simplified.

It is admitted that most of the evidence available regarding the lines followed by migrating birds refers to the important routes, little being known of the minor lines, so that it is not inappropriate that the influence of an important physical feature, such as the Thames, should be considered. Moreover it would seem that the time is ripe to reflect on what relation there is between this river and the bird-life, which is known to occur along its course.

The Thames rises in the Cotswold Hills, Gloucestershire, and its direct course from Lechlade to the Nore is said to be 124 miles, the indirect course being 210 miles. Roughly its course runs from west to east and it separates the counties of Gloucester, Oxon, Bucks, Middlesex and Essex on the north from Wilts, Berks, Surrey and Kent on the south. Its chief tributaries on the left are the Windrush, Evenlode, Cherwell, Thame, Colne, Brent, Lea and Roding, and on the right the Kennet, Loddon, Wey, Mole, Wandle, Ravensbourne, Cray and Darent. It is tidal to Teddington, and the estuary at the Nore is five miles wide. It will be seen that if its course is followed by birds the avifauna of eight or nine counties will be more or less affected.

There are probably many concepts as to how the word "Migration" should be interpreted, but I have collected evidence to show to what extent the river is affected by birds of passage.

One of the most important movements of birds, which affect the Thames, is the great autumn east to west movement, which has been observed at the light-ships off the east coast of England. For what knowledge we have of the influence of this migration on the Thames we are indebted to the observations made by Dr. Eagle Clarke in September and October, 1903, on the Kentish Knock Lightship, which is about thirty miles from the mouth of the Thames. This migration is said to be mainly composed of Central European Birds, which are either passage-migrants, or those birds which add to the winter avifauna of our islands. It is at its height in late September and throughout October, and great numbers of birds have been observed day after day at the lights, sweeping towards the coasts of Kent, Essex, Suffolk and Norfolk. It is said to have its centre on the Essex coast and at the mouth of the Thames, which objectives are reached by a direct westerly course. It is of great interest to notice that the birds comprising this movement are not making for the nearest land but are steadily following marked courses, which would seem to be adhered to across the North Sea. This great autumnal flight of birds probably emanates from the stream of migration which is stated to flow from the rivers Maas, Scheldt and Rhine. A fairly long list of the birds, which form part of this movement, is given, but the species most numerously represented are Rooks, Grey Crows, Starlings, Skylarks, Tree-Sparrows, Chaffinches and Lapwings. For the purpose of this paper there are a few others, which must be mentioned, namely, Meadow Pipits, Mistle Thrushes, Wheatears, Goldcrests, Swallows, Martins, Ringed Plovers, Black Terns and more rarely the Black-winged Stilt. Many wild-fowl also reach England by this route. Many of these immigrants on reaching the English shores are said to move up the Thames Valley on their way to their winter quarters in south central England, and others skirt the coast in a northerly direction, particularly Skylarks and Grey Crows, cutting inland at various points as they proceed. The left wing, which is an important part of the whole, passes westwards along the shores of the channel to winter quarters in the southern parts of England and Ireland, while others may reach the coast of France on their way farther south. Although these flights from east to west start about midway through September, reach their height in October and continue spasmodically until the middle of November, it must be added that when exceptionally cold weather occurs in Central Europe these movements may be renewed through the winter by Skylarks, Starlings, Thrushes, Lapwings and other birds. There are various other features of this migration which do not bear closely on the present subject. Dr. Clarke, in a list of British inland routes, includes the Thames Valley, which he describes as a much-used route to and from the interior of southern England.

In considering the question of migration I always feel that too much has been taken on trust. There can be no doubt as to the reality of this east to west autumn movement, so the next step is to collate the evidence to show its influence on the Thames. It is not inappropriate that one of the most important links in the chain of evidence was furnished by the author of "Studies in Bird-Migration". Dr. Clarke gives a graphic description of a westerly movement, which was taking place when he quitted the Kentish Knock to return to the mainland, on October 18, 1903. The movement included what he describes as the usual species, namely Starlings, Skylarks, Chaffinches and Tree-Sparrows. During the passage of four and a half hours, the distance travelled being close on fifty miles, between the light-ship and Southend, the relief ship was at first crossing the course of, and afterwards sailing parallel to the flight of continuous flocks, mainly composed of Starlings and Skylarks, and in lesser degree of Chaffinches, all going westwards and flying just above the surface of the sea, which was very calm. These flocks, particularly those of Starlings and Skylarks, are described as never having been absent from view and it was estimated that tens of thousands of these birds were observed during the passage. This experience seems to have made a deep impression on Dr. Clarke, for he writes, "It was the marvellous continuity and apparently inexhaustible nature of these movements that were a revelation to me, both on this and other occasions". As the mouth of the Thames was approached, the flocks became less numerous, but groups of Starlings and Skylarks were still moving westward when Southend was reached at 4 p.m.

A portion of this great migration has been traced to the Thames estuary, and it now remains to consider if its influence can be traced farther inland. Mr. F. W. Frohawk states that on September 20, 1914, he saw an immense number of Martins (*Chelidon urbica*) passing along the Essex coast at the mouth of the Thames from Shoeburyness to Westcliff, flying due west. The birds were first noticed at 8.50 a.m. and they continued passing in varying flocks up to fifty until noon. Many thousands are stated to have passed in the three hours and frequently as many as a hundred birds were counted in less than a minute. All kept in a direct course. On September 22, 1924, I noticed a similar movement of this species, although on a smaller scale, on the Stour. Although this does not affect the Thames it is of such a closely confirmatory nature that it is worthy of being quoted. W. Prentis relates that Rainham on the Medway, was visited on November 8, 1886, by numerous flocks of Fieldfares, all flying in the same direction, from east to west, the flights being continuous and following each other at short intervals. The birds, which did not deviate from their course, flock following flock in the same direction, flew low, just topping the hedges and woods and a few struck the telegraph wires. A similar occurrence was observed in the autumn of 1878 but in vastly superior numbers. The next series of observations were made at points much farther up the Thames, and actually in London. The first of these refers to the occurrence of extraordinary numbers of Skylarks in Regent's Park on January 31, 1857. The birds were described as being so numerous that they actually darkened the air and were flying so low that they had to divide to pass the observer. During the course of an hour, flight after flight passed, sometimes a few hundreds at a time, sometimes in myriads. The direction of the flight was N.E. to S.W. It must not be overlooked that other flights of Skylarks, which were following other directions, have been recorded in the Thames Valley. F. Cotton records that large flocks passed over the Thames at Tooley St. from north to south, some hundreds having been seen between snow storms, on January 22, 1895. A similar flight was witnessed by H. Cripps on November 13, 1897, flights amounting to 500 to 700 birds having been seen going from north to south over Oxford Street.

Another very remarkable passage of birds, including Rooks, Starlings, Skylarks and Fieldfares, was noted at Bermondsey on October 22, 1896, and is quoted by Dr. Clarke. The numbers of these birds, which passed, were very striking. The flight lasted for half-an-hour, in the course of which, over thirty flocks were counted, each containing thousands of birds.

The next piece of evidence is an object lesson in bird-study. I refer to the observations made by F. D. Power in his garden at Brixton over a period of thirty-five years, from 1874-1909, the results being published in book form in 1910. This writer comments on the fact that out of a total of 125 species identified the large number of 83 were migratory species. While endeavouring to explain this he points out that his garden is in the line taken by birds, which reach the Kent coast to the south of the mouth of the Thames, and which, following the river, pass over Brixton, which is just south of the Metropolis. Although many of these cross London, in spite of the noise of the traffic, flocks of passing Chaffinches having been seen near London Bridge on a few occasions, it is inferred that the mass of the migrants avoid the Metropolis. The description of this migratory movement when a great passage is in progress is of much interest. With good weather, between the second week and the end of October, after one or two days of W.N.W. wind, the passage of birds from about 7.30 to 10.30 a.m. is described as remarkable. Flock after flock crosses the garden, apparently with the purpose of getting as far west as they can, while the wind is favourable. With a light wind and clear sky the birds would be about thirty to forty yards up, while on a dull blustering morning they would come just over the trees and houses. The flocks varied greatly in size, containing from six to over fifty. In the hosts which passed, Chaffinches exceeded all the other species put together, with Larks coming next, followed closely by Starlings. Rooks are placed next on the list, being followed by Greenfinches and Bramblings, the latter always being associated with Chaffinches. Other species noted migrating included Fieldfares, Redwings, Hedge Sparrows, and Great and Blue Tits. This type of migration was only observed in autumn, very little being seen in spring.

So far all the migrants, with which we have dealt, have been passerine birds, proceeding up the Thames, certainly in a westerly direction, but before we pass from this group of birds, we must refer to another type of movement which affects them, namely an autumn migration but in the opposite direction. Practically all the knowledge which we have of this movement, results from the observations of Mr. C. J. Cornish, who states that he had spent the greater part of his outdoor life in the Thames Valley. He informs us as the result of many years' careful watching that he has determined that several species regularly migrate down the Thames. The first species to begin the "trek" towards the sea are the early broods of Yellow and Pied Wagtails, which are said to make their appearance at a surprisingly early date, about forty having been seen on June 26, 1901. Blackbirds next make their appearance, passing down the stream. Sand Martins are stated at the commencement of their emigration to travel down the river in small flocks and by easy stages, sleeping in different osier beds on their way seawards. Mr. L. Parmenter informs me that he saw a party of about thirty of this species fly down the river at Barn Elms on September 13, 1926. The most striking passage, described by Mr. Cornish, is that of Swallows and House Martins. This migration is said to be immense and to take place usually in the second week in September. A vivid description is given of a great migration of Swallows, down the Thames, on September 16, 1896, after stormy weather, on Chiswick Eyot. Between 5 and 6 p.m. immense numbers of Swallows and Martins suddenly appeared over the eyot, arriving in thousands and tens of thousands. The description of this very extraordinary occurrence is too long to give in detail, but it may be said that these birds were travelling too high to be seen and kept dropping down perpendicularly to the surface of the water or the eyot, with a sound, which is likened to the rush of water in a hydraulic pipe. At 6.30 next morning every Swallow was gone. These migrations of Swallows and Martins are said to go past London sometimes to the mouth of the Thames. An instance is quoted of the craft lying in Hole Haven off Canvey Island, being found covered with Swallows, too benumbed to move, but which disappeared seawards on the appearance of the sun. On September 11, 1927, I observed a remarkable emigration of Swallows with some Martins on the Thames between Tilbury and Mucking. During the five hours that I spent on this stretch of the river these birds were steadily streaming in the direction of the sea, and many hundreds must have passed.

Mr. Cornish describes another type of migration down the Thames, which is the result of hard weather. The birds observed on this movement are said to be recruited from the ranks of the resident birds, with some winter visitors, and pass down the river feeding on the mud and among the stones at ebb tide. The species identified included flocks of Starlings and scattered birds, mainly Redwings, Thrushes and Blackbirds, and on occasion Robins.

Let us now return to the mouth of the Thames to consider the influence on the river of other types of migrational birds. From the end of July onwards a great rush of southward bound birds takes place along the east coast of England, but only a portion of this is likely to affect the Thames. On arriving at the projecting Norfolk coast part of this migrating stream strikes due southwards over the sea to the coast of Kent. Evidence of this is provided by the appearance of birds of passage on the Norfolk and Kent coasts, which are very rarely found on the Essex coast, and confirmatory evidence was obtained at the Kentish Knock light-ship, which lies on a line drawn between these two points. There are, however, two portions of this great migration which follow closely the Essex coast and have some influence on the Thames. From the latter part of July to the earlier part of August many limicoline birds and a smaller number of gulls appear, and these are followed by a passage of terns. At this period various passage-migrants annually follow the estuary for some distance. Among these birds are included Greenshank, Redshank, Common Sandpiper, Green Sandpiper, Dunlin, Whimbrel, Curlew, Ringed Plover and Lesser Black-backed Gulls. Many of the Black-headed Gulls, which penetrate the estuary at this season, are on passage. It is probable that this migration supplies the more inland reaches of the river with its autumn waders, etc. I incline to the view that there is an annual autumn movement of terns from the mouth of the estuary westwards. In two consecutive seasons I witnessed the passage of these birds up the river. On August 22, 1926, I noted terns persistently making their way up stream at West Tilbury, and at East Tilbury a party of thirty Common Terns was seen. I had a similar experience on September 11, 1927, when the river at East Tilbury was alive with terns, one flock which settled, containing about fifty birds ; among these Common and Black Terns were identified. Most of the terns, which I have seen, have been immature. Dr. N. F. Ticehurst gives some evidence of the autumn appearance of terns on the Thames. He states that the Black Tern occurs on the Thames and Medway in August with tolerable regularity. Little Terns are said to penetrate up as far as Dartford Creek, the Common to make its way a considerable distance up the river and occasional Sandwich Terns are seen. This author states that in autumn and spring many Kittiwakes pass up the river as far as Dartford and penetrate into the lower creeks and reaches of the Medway. If we keep in view the marine nature of the habits of this bird, this is a very surprising movement, which I have been unable to confirm.

This brings us to a consideration of the occurrence of these aquatic birds in the inland sections of the river. The waders, which I have mentioned, have been recorded at some time or other, some of them annually, at the reservoirs in the London area. Provided that we can show a direct relation between these birds, which frequent these sheets of water, and the river, it is justifiable to say that the most feasible explanation of their occurrence is that they formed part of the coast migration. The Common Sandpiper, remembering its habits and breeding haunts farther to the north, is probably an exception, and both G. W. Kerr and C. J. Cornish were of the opinion that this species migrated up the stream in spring and down in autumn. The annual appearance of so many Black-headed Gulls in London from October to March proves that there must be an annual movement in both directions between the Metropolis and the sea. This movement was recorded by J. E. Harting as having started in January, 1895, and it seems to have been continuous since that date. The question that arises in our mind is what is the origin of our London gulls? Of eight ringed birds which were recovered along the Thames Valley in winter, seven had been ringed abroad in the previous breeding season. Four of the seven, which had been ringed in Pomerania (2), Holland (2), Schleswig-Holstein, Denmark, and Sweden, were recovered in the London postal area. The eighth bird was ringed at Ravenglass in the nesting season of 1913 and was recovered at Chingford in the winter of 1914-15, so that it cannot be said where it migrated from, as gulls do not always return to the gullery in which they were born. In considering these results it should be borne in mind that very large numbers of this species have been ringed in the British Isles. In the light of this information, this movement is not so much a new migration as it is the extension or modification of an old one. Among the Black-headed Gulls appear a few Common, and it is interesting to note that one recovered in St. James's Park on February 16, 1927, had been ringed in Denmark in July, 1925. It may be that we are to have a new regular movement of gulls along the Thames, although of a different nature and performed by another species. Mr. J. P. Hardiman observed a marked passage of Lesser Black-backed Gulls on the Thames, at Barnes and adjacent reservoirs in 1927. This started early in August and was completed in about a month. This observer informs me that he noted a repetition of this passage in 1928. Terns, as a group, have been so frequently recorded from the upper waters of the Thames as to suggest that their appearance is annual. The Common and the Black Tern are the species, which have been recorded with some degree of regularity, but the Arctic, Little and Sandwich have also been seen. During the autumn of 1926 all five species were reported between Barnes and Staines. Mr. A. H. Cocks, writing in 1895, considered that the Common Tern was entitled to rank as an annual autumn visitor to the Upper Thames, and he considers the Little and Black frequent visitors. Mr. O. V. Aplin has supplied information of the autumn appearance of terns on the Thames in Oxfordshire.

The relation of the many birds, which frequent the reservoirs and sewage-farms along the valley of the Thames, to my subject presents considerable difficulties. It is not necessary to describe the bird-life at these localities, as it has been fully dealt with, but it should be borne in mind that the occurrence of interesting birds on the artificial water in and around London is not new. F. Bond's list of birds from Kingsbury Reservoir to 1843 demonstrates that, and as far back as 1851 we find unusual wild-fowl being recorded from the Serpentine, St. James's Park, etc. The great difficulty in ascribing the appearance of the many aquatic birds which frequent these localities, to their proximity to the Thames is that so many similar sheets of water in various other parts of Britain are similarly affected, and there can be no doubt that there is some degree of overland migration. For this reason I hold the view that even without the Thames we should find many migrating birds in the localities referred to. The relative positions of the various reservoirs in the London district, however, lend themselves to a closer examination of the subject. We have in the London area two main series of reservoirs, Barn Elms, Molesey, and Staines on the one hand, and the Lea Valley reservoirs on the other, the only differences between the two being that the former are in close proximity to the Thames. The bird-life of the first series is always more varied than that of the Lea Valley series, but I consider that Barn Elms reservoirs supply us with proof positive that we owe at least part of the birds of the reservoirs to the influence of the Thames. Considering the type of these reservoirs and their position in relation to the Metropolis, so many interesting birds would not have been seen, had it not been for the fact that the reservoirs are contiguous to the river. There is another small piece of evidence, which supports the idea that some of our reservoir birds follow the Thames, namely, that that now annual winter visitor, the Snew, always appears at Barn Elms, etc. some weeks before it is seen at the Lea Valley. It would seem that to reach London the birds follow the Thames and then spread out. In regard to the sewage-farms it is impossible to get conclusive evidence. The notable list of birds, seen at Reading sewage-farm, has been credited to the proximity of the Thames, and although the river probably has its influence, it is very difficult to prove it. It should be borne in mind that Dr. N. H. Joy, the chief recorder, did not attribute to the Thames the many waders seen.

I have so far confined my attention to the movements of autumn, and although this is the period of activity, yet there is a little evidence that the river is also affected in spring. C. J. Cornish states that a number of warblers use the river as a migration road in spring. Among those which he states pass up the river, are Whitethroats, Blackcaps, Chiffchaffs and perhaps Nightingales. The statement has received some support, for O. V. Aplin informed Dr. Eagle Clarke that in spring the summer migrants reached Oxfordshire by this route. Too much should not be made of this evidence as the movements may be local. The B.O.C. migration inquiry tended to show that most of our summer migrants land on the south coast and move northwards. Terns are occasionally recorded on the upper Thames during spring. O. V. Aplin speaks of the Common as a frequent visitor to the Thames in Oxfordshire in spring, and of the Lesser Tern as occurring in most years in April, May or June but never in autumn. The Black Tern was observed at Henley in June, 1871, at Oxford in April, 1910, and at Littleton Reservoir on May 7, 1927. Mr. G. W. Kerr saw a flock of a hundred Common Terns on the river at Old Windsor on May 12, 1906. This is probably the largest flock of terns recorded on the upper Thames. The Sandwich is one of the least frequent of the group yet A. H. Cocks recorded a party of eight at Marlow on April 10, 1895.

Another form of evidence of movements of birds on rivers is that derived from duck decoys, but it is a remarkable fact that the existence of only one decoy on the Thames has been proved. This is, however, of very great interest, as it was situated in St. James's Park and was the only one known to have existed in Middlesex. It was constructed for Charles II by a Dutchman, named Sydrach Hilius, about 1665. It was situated at the west end of the lake, on an island, called Duck Island, and in the opinion of Sir Ralph Payne-Gallwey was a Pipe Decoy. The most interesting reference to the decoy is in Evelyn's Diary, February 9, 1665. He writes "I went to St. James's Park where I saw various animals and examined the throate of ye Onocratylus, or Pelican, a fowle between a Stork and a Swan. a melancholy waterfowl brought from Astracan by the Russian Ambassador. . . . Here was also a small waterfowl not bigger than a Morehen that went almost quite erect like the Penguin of America; it would eat as much fish as its whole body weighed. The Solan Geese here are also great devourers. Here was a curious sort of poultry, not much exceeding the size of a tame pigeon . . . a milk-white Raven and two . . . Cranes. The Parke was, at this time, stored with numerous flocks of several sorts of ordinary and extraordinary wild fowle, breeding about the Decoy, which for being near so greate a city, is a singular and diverting thing". It is stated that Duck Island was removed at the end of the eighteenth century, the decoy having disappeared long before. It is not improbable that some of the wild-fowl captured in this decoy found their way up the Thames. It must be added that the late Mr. Miller Christy suspected the presence of an old decoy at Fobbing.

The evidence of movements along the course of the river would not be complete without reference to the many unusual occurrences, which have been recorded, although to deal with them in detail would be out of the question. It is not without interest that we are indirectly indebted to one of our very greatest novelists for what I believe to be the only description of the ornithology of the Thames, for it is in "Dickens's Dictionary of the Thames" that we find J. E. Harting's excellent description.

I have at times reflected on the small amount of available evidence of birds making their way along the course of the river in London, so that Mr. H. G. Attlee's account of the passage of a Goosander is of interest. He writes that on January 6, 1908, when watching gulls, he saw a male Goosander fly over Vauxhall Bridge. It flew not more than thirty or forty feet above the bridge, and he concluded that it must have risen on one side and dropped on the other on its way up stream. If, as seems probable, some of the birds fly low over the river, the absence of information might be accounted for by night migration, but that is conjecture.

I have drawn to your notice as much available knowledge as possible, but it is necessary before concluding to reconsider the value of the evidence and what it has told us.

Having accepted that the autumn east to west movement affects the Thames, the next question that arises is, to what extent? We have seen that the east to west migration along the Thames of several of the passerine species, which are included in the list of birds which use the east to west route, has been recorded and one would say reliably, but, with the exception of F. D. Power's work, isolated instances were recorded. It can be said that no more feasible explanation of these migrations could be given, but I would not care to be committed beyond that. Much more evidence is needed before we are justified in saying that some of the birds of the autumn east to west movement follow the river to their winter quarters in south central England. It has been shown that during autumn there is a passage of certain birds, the most important being the case of the Swallow, down the Thames towards the sea. It is of great interest that the river should be followed in both directions in the same season.

We have traced the relation between the terns, which are seen on the estuary, and those noticed on the upper reaches and the adjacent reservoirs, and feel justified in concluding that these birds follow the river in this manner annually. The Black Tern is included in the list of birds composing the east to west movement, but the birds which we see, probably follow down the east coast.

The probability of the birds of the reservoirs having come by more than one route has been dealt with, but the information obtained at Barn Elms has proved that some come by the Thames, but what part of the whole we cannot say.

I do not think that it has ever been disputed that the Thames is followed in both directions by the many Black-headed and other gulls, which annually appear in London, but, as the result of ringing, in future when we regard these birds we shall picture a large proportion of them proceeding across the North Sea to and from such countries as Denmark, Sweden, Holland, etc.

Although most of the migration, seen on the Thames, is confined to the autumnal period, there is also a certain amount in spring. It seems suitable to remark here that it is generally concluded that these birds of passage follow the stream from the estuary, and while I believe that the greater part appear in this manner, yet the possibility of some following the stream seawards should not be overlooked. On August 30, 1927 an Oyster-catcher, which was seen at Barn Elms Reservoir by Mr. L. Parmenter, flew down the river, not up, and this observer informs me of other similar instances. These observations are not proofs but they are suggestive. I think that we should bear in mind the probability of some of the birds seen on the Thames in spring, having struck the river inland on their way northwards, and if this were so it would seem feasible to think that they might find their way to the sea by the river.

We have to consider where the autumn passage migrants exhaust to. Most of these are birds of the year. This applies particularly to the terns and gulls, and it is not improbable that they are wanderers from the main route along the coast. Sooner or later they must be obliged to leave the river and find their way southwards. If we can imagine our chief estuaries and rivers being similarly affected, we can see the origin of some of our overland migration, and it is always possible that some birds may arrive in this way on the inland parts of the Thames.

To sum up briefly I would describe the Thames as a minor migration route which is used by two types of migrants, first by those birds which are making their way to their winter quarters in the London area and elsewhere, such as the Black-headed Gull, Smew, Goosander, Swallow, etc., and which might be described as regular migrants as probably the same individuals appear annually; secondly by a group of wanderers, which have fortuitously followed the river, which may be composed mainly of different individuals each year, and which gradually break away from the river and proceed in a more or less southerly direction to their ultimate winter quarters.

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A Mediterranean Birthwort in Surrey

Aristolochia rotunda (Linn.).

IN July the occurrence of this plant in Surrey was reported to Kew, whence the information was sent on to a member of the L.N.H.S., who was asked to visit the district and investigate the discovery. After considerable search the plants were located on the 29th July, when six specimens were seen in flower and two others in seed. There were several other plants, all close together, on a hillside which had recently been cleared of bushes and undergrowth.. A careful search round the spot failed to disclose any stray roots away from the main body. The whole colony spread over an area 10½ feet long by 6 feet wide. As the root is a tuber, there must have been a score or more individual plants. The place was visited at intervals up to the 15th September, when four plants were still in flower, and two in fruit, while others had shed their seeds shortly before. On that date some seeds were taken and planted a few yards away to give the plant more prospect of surviving in case the herbage in that one spot should be destroyed by fire.

The plants are inconspicuous and are not likely to be picked by the ordinary flower grabber, as they possess little beauty to attract anyone.

Subsequent enquiries revealed that the colony had been known to Mr. Swain (another member of the L.N.H.S.) and to Mr. Beadell, of Warlingham, for a number of years, and also that Mr. C. E. Britton had in 1901 and 1902 seen a similar patch of the species in Kent, in a spot which resembled the one described above. This find he had communicated to Dr. G. Claridge Druce, who very kindly put the Society in touch with Mr. Britton.

The problem of the origin of these two colonies is one on which we can at present throw no light. Both are right away from any habitations, so the plants are not likely to be garden escapes. Also the plants are hardly those that would be grown in a garden unless by a botanist, as the flower has little beyond its peculiar shape to cause anyone to notice it. The two situations are similar, although they are several miles apart. It now remains to be seen if any plants can be discovered in intervening localities.

The recorded distribution of *A. rotunda* is as follows:—Southern France, up to the north of the Gironde (the nearest station to Britain), North and West Spain, South Switzerland, Italy, Greece, Macedonia, and North Africa. It is therefore a Mediterranean species, and as it does not occur in Northern France, Belgium, or Scandinavia, it seems unlikely that its introduction into Surrey has been by other than human agency.

Although an alien, this species is a welcome addition to the British flora. Like its congener *A. clematitis,* it possesses interesting flowers that appear to be specially adapted to secure cross-pollination. These are described as follows in Knuth's "Handbook of Flower Pollination" (English translation by Ainsworth Davis, Vol III, p.354) :—"The flowers grow singly and always upright. The green perianth possesses a narrow, cylindrical tube,which ends in a comparatively large, flat limb, brown-black on the inner side. After the anthers have dehisced it bends sharply backwards and downwards, folds up round the perianth tube, and so closes the flower-entrance completely. The hairs situated in the perianth tube resemble those of *A. clematitis,* but the barrier apparatus is more perfect. . . ."

"The following seven species of flies have been observed* in *A. rotunda* :—(1) *Scatopse nigra,*Mg. ; (2) *Ceratopogon minutus,* Mg. ; (3) *Cecidomyia atricapilla,* Rond. ; (3) *Sciara minima,* Mg. ; (5) *Oscinis aristolochiae,* Rond. ; (6) *O. delpinii,* Rond. ; (7) *O. dubia,* Macq."

*In Italy by Rondassi (1861), and Delpino (1869).

Aristolochia Clematitis, Linn.

IT is of interest to record that the Birthwort, *Aristolochia clematitis,* Linn., was seen by the members of the Botanical Section on their field meeting on June 10th, 1928, just coming into flower, in an enclosed patch of turf on the Thames bank beside Hampton Court. This is the locality mentioned in Trimen and Dyer's "Flora of Middlesex," published in 1869. The reference is, "By the river near Hampton Court, where the railings by the gardens begin, coming from Ditton Ferry; Watson." Another locality above Hammersmith Bridge is given and the note added, "Escaped from gardens in both cases." The conditions at Hampton Court must be favourable for the plant to have persisted so long, although it does not seem to have spread further than its running roots would carry it.

The flowers of the Birthwort are interesting in their adaptation to pollination by small insects. They are not unlike a tiny yellow Arum in shape, with a tube, beset with downward pointing hairs, leading to an enlarged base forming a chamber where the anthers and stigma are found. The stigma is receptive before the anthers are ripe. Insects crawling down the tube, if they are already dusted with pollen, fertilize the stigma, but they cannot escape until the anthers dehisce, again covering them with pollen. The flower stalk now bends downwards, the hairs in the tube shrivel, and the insect prisoners can emerge to carry fresh pollen to another flower. Shortly afterwards the limb of the corolla closes over the tube, and the fertilized flower becomes inaccessible to further visitors.

Notes on British Sawflies. I.

The Larva and Food-plants of *Emphytus carpini,* Hartig.

By J. C. ROBBINS, F.E.S.

IN June, 1926, I found several sawfly larvae on *Geranium* sp. at Oxted, Surrey, but failed to rear them. On 31st August, 1926, I found similar larvae on *Geranium sanguineum* in a garden at Limpsfield, about three miles away. From these I obtained adults of *Emphytus carpini,* Htg., which emerged between 29th May and 12th June, 1927. The larvae also appeared in this garden on the same plant in 1927 and 1928. On 4th July, 1928, I found larvae of the same sawfly on *Geranium pratense,* growing wild at Frieth, near High Wycombe, Bucks. From these I reared a single adult, which emerged on 24th July, 1928. Finally, on 30th September, 1928, I found larvae on *G. pratense* in a garden at Godalming, Surrey.

Dr. R. C. L. Perkins, F.R.S., who very kindly confirmed my identifications of two of the specimens bred from the Limpsfield larvae, told me that *E. carpini* has been known to him for years as attached to *Geranium,* although he has not actually bred it. He finds the larvae commonly on species of *Geranium* on the banks of lanes in South Devon, and the adults flying round or ovipositing on the plants.

The larvae feed on the under sides of the leaves, making small round holes, and at first eat only the lower epidermis and mesophyll, leaving the upper epidermis intact. They have sixteen pro-legs, on abdominal segments 2-8 and 10. The body is cylindrical, tapering towards the tail, and is coiled round when the larva is at rest. The larvae do not spin cocoons, but burrow in stems or dead wood when full-grown, like those of most other species of the genus. One of my larvae, failing to find a suitable stem into which to burrow, pupated, and in due course successfully transformed into an imago, loose in a box, without any protection. From the dates on which I have found larvae and obtained adults, it appears probable that there are normally two generations a year, the larvae of the first occuring in June and early July, and those of the second in August and September.

Description of full-grown or nearly full-grown larva : length 12-13 mm. ; thorax and abdomen slightly wrinkled, glabrous or nearly so ; dull green above on thoracic and first one or two abdominal segments, becoming dull pinkish-green or lilac-grey on remaining segments, the last two being darker ; each segment bears a transverse band of four minute white tubercles, and a few others on each side, these being most readily noticeable on the thoracic segments ; legs and pro-legs and ventral and lateral parts of the body greenish or pinkish-white; tarsal claws brown; head rather dull black or greyish-black, brownish in front, clothed with short white hairs; mouth-parts light brown except apices of mandibles, which are dark. The pinkish or lilac tinge of the dorsal part of the abdomen is generally more noticeable in partly grown larvae than in fully grown ones.

Kaltenbach (*Verh. naturh. Ver. preuss. Rheinl.*, xix, p. 17, 1862; *Pflanzenfeinde*, p. 81, 1874) described similar larvæ, which he found feeding on *Geranium Robertianum* at Aachen, and from which he bred *E. carpini.* Konow (*Zeitschr. syst. Hym. Dipt.*, i, p. 236, 1901; ii, p. 51, 1902) considered that Kaltenbach's larvae were those of *E. pallipes*, Spin. (*grossulariae*, Kl.) and Enslin (*Tenthred. Mitteleuropas*, p. 239, 1914) while admitting some doubt, expressed the same opinion, although Goury (*Feuille jeunes Nat.*, xxxvii, p. 21, 1906) stated that he had reared *E. carpini* from larvae found on *Geranium sanguineum* at Fontainebleau. Forsius (*Medd. Soc. Fauna Flora fennica*, xlv, 1918-19, p. 110, 1920) states that both *E. pallipes* and *E. carpini* almost certainly feed on *Geranium sylvaticum* in Finland; Dr. Forsius has very kindly informed me that he obtained larvae of both species on plants of *Geranium* on which egg-laying females were confined a week earlier, but that he failed to breed adults from these larvae, so that his records are not entirely reliable.

Miss Chawner and Dr. Perkins found larvae of *E. pallipes* on various species of *Viola* in Hampshire and Devon. Chawner and Peacock (*Ent.*, lvi, pp. 125-128 and 179-181, 1923) reared large numbers of these larvae on *Viola*, and they state that "the full-grown larva corresponds exactly in colour, size and shape to *E. carpini* as described by Cameron." Cameron's description (*Monogr. Brit. Phytoph. Hym.*, i, p. 279, 1882) is a translation of Kaltenbach's. Various authors have stated that *E. pallipes*, Spin. (*grossulariae*, Kl.) feeds on gooseberry (*Ribes Grossularia*), but these statements are probably all traceable to the description by Hartig (*Blatt. u. Holzwespen*, p. 250, 1837) of a larva, which he states, citing Bouché as his authority, belongs to this species and is found on gooseberry and *Salix*. It is almost certain, as has been pointed out by von Stein (*Ent. Nachr.*, xiii, pp. 209-210, 1887) and Enslin (*loc. cit.*), that Hartig's account of the larva is based on an error. Chawner and Peacock could not induce larvae from *Viola* to feed on gooseberry.

Similarly, errors have arisen with regard to *E. carpini*, Konow (*op. cit.*, i, p. 236; ii, p. 258) stated that the larva occurred on *Crataegus* and *Sorbus aucuparia*, but had not been described. The authority for *S. aucuparia* appears to be Dours (*Mém. Soc. linn. Nord France*, iii, p. 17, 1873), and he gives no details; this is very suspicious, especially as Hartig (*loc. cit.*) states in his original description that the *adults* occur on *Carpinus* and *Sorbus aucuparia.* The larva was unknown to Hartig. The record of *Crataegus* is even more inexplicable: Nerén (*Ent.*

Tidskr., xii, pp. 6 & 13, 1891) states that the larva feeds on *Crataegus* according to Fallén; Fallén, however, died in 1830, seven years before *E. carpini* was described.

To sum up, it is certain that *E. carpini* is attached to species of *Geranium* and *E. pallipes* to species of *Viola*, although the latter sawfly may possibly have other food-plants as well.

According to Cameron (*loc. cit.*), *E. carpini* is common and generally distributed in Scotland, and apparently common in England. This is to be expected in view of the frequence of species of *Geranium* in most districts. I have found records that are probably reliable from Cornwall (Clark, *Rep. R. Cornwall Polyt. Soc.*, n. s., i, p. 368, 1918), Warwickshire (Saunt, *Ent. Rec.* xxxvii, p. 174, 1925) and Norfolk (Bloomfield and Atmore, *Trans. Norfolk and Norwich Nat. Soc.*, viii, p. 818, 1909).

A Variety of *Epinephele Jurtina* (*Janira*)

ON August 11th, 1928, I captured on the wing, near Eynsford, Kent, a female *E. jurtina,* in which the whole of the usual brown coloration has disappeared and is replaced by a very light pinkish yellow tint. The fulvous patch on the forewings remains, but is orange rather than fulvous, and the same tint suffuses the greater part of the forewings beneath. The ocellated spots are visible as a circle—or rather ellipse—of very pale leaden colour, each with a double pupil of pure white. The insect is in fair condition only, the fringes, where present, being white.

This is the second example of this bleached form which has come into my hands, Mr. C. L. Collenette having given me a very similar one taken by him some years ago at Salcombe, South Devon ("London Naturalist," 1925, p.49). Dr. Cockayne examined this insect and reported that the scales were thin and "curled." With such examination as I have been able to make with a low power lens, I cannot see any distortion in the scales of the Eynsford specimen. They are thin and lacking in pigment, but appear to be regularly shaped, although scarcely longer than broad. The scales of a typical *jurtina,* at least twice as long as broad, are either absent or are represented by these abbreviated forms.

R. W. ROBBINS.

Brambles of Kent and Surrey (2)

By WILLIAM WATSON.

Rubus silvaticus, N. and W. is recorded for Sheen Common (v.c. 17). I have searched for it there but have failed to find it. Can *R. hirsutissimus* Sudre and Ley, which grows there, have been mistaken for it? These two species stand next to each other in Sudre's arrangement. I have not seen *R. silvaticus* from either Kent or Surrey. In the herbaria that I have consulted three-quarters of the brambles labelled *R. silvaticus* are wrongly determined: yet it is a distinct species. The tiny prickles that characterise it appear in the first year of growth from seed. Long prickles it never produces on stem or panicle. The panicles are leafy to the apex only on the lower flowering branches; they are dense-flowered, and are without stalked glands. The leaves have the veins very prominent beneath and densely, shortly hairy. The leaflets become concave. The petals are incurved at first, but open out widely, and the white stamens are then appreciably longer than the green styles. The anthers are considerably pilose. The calyx segments are finely greyish felted, with dense woolly hairs and short points. It is late to come into flower, and produces only small, subglobose fruits.

R. myricae Focke and *R. hesperius* Rogers. In 1901 Dr. E. G. Gilbert found a bramble at Warwick Park, Tunbridge Wells (v.c. 16), which he took to be, possibly, *R. plicatus* × *leucostachys*, but for which Rogers suggested the name *R. leucanthemus* P.J.M. In the following year Rogers came to Tunbridge Wells and gathered the bramble with Gilbert. Rogers then suggested that it was really a form of *R. myricae,* but nearer on the whole to *var. hesperius* than to the type. He pointed out to Gilbert that the Tunbridge Wells bramble had a hairier stem, smaller prickles and broader leaf-toothng than either the type or the variety, and that the leaves were harsher to the touch beneath; and said that he thought it would have to be called *R. hesperius,* new to Great Britain. In the B.E.C. report for 1904 Rogers refers again to the plant as intermediate between *R. myricae* and *var. hesperius,* being led to mention it by the discovery of a "very closely allied" (but not identical) bramble near Bangor, Carnarvon, which he says is "apparently a form of *R. hesperius.*"

I have seen several specimens of the Tunbridge Wells bramble, gathered by Gilbert, but have not seen the living plant. I have also seen dried specimens of authentic *R. myricae, R. hesperius,* and *R. egregius* Focke. I have not seen the Bangor Bramble, but have seen dried specimens of a bramble labelled "*R. hesperius* Rogers" coming from Tremadoc, Carnarvon, which is possibly the same thing. This latter bramble is in my opinion *R. egregius*

Focke, and the Tunbridge Wells bramble, *R. egregius var.* probably *var. plymensis* Focke. The Tunbridge Wells bramble has an obtuse-angled but slightly sulcate stem, which is densely shortly hairy, with short and weak, or stronger and recurved but still short, prickles, a few fine prickles, and more or fewer short stalked glands. The stem leaves are mostly quinate-pedate, and one or two on the flowering branches are quinate also. All are plicate; thickly greenish to yellowish grey felted and pubescent beneath and opaque and glabrous above. The teeth are broadly ovate-mucronate and nearly regular. The terminal leaflet is suborbicular, notched at the base. The panicle is densely-flowered, rather long and narrow, slightly diminished to the apex, naked of simple leaves, with sometimes, 1, 2, or 3 moderately long, half erect branches below. The upper branches are nearly patent and 1-4 flowered, deeply divided. The flowers are small; petals obovate, oblong, remote, "a pure dead white" (Gilbert); stamens rather shorter than the styles, anthers pilose; calyx segments triangular ovate, attenuate into a long linear point, patent or somewhat ascending on the forming fruit (at 29th July). Not seen in ripe fruit.

A small bramble which I collected in 1925 at Seal Chart (v.c. 16) and thought would be *R. hesperius* I can now see, having cultivated it since then, is not *R. hesperius,* but is, I think, *R. sciaphilus forma microphylla* Lange. It has pilose anthers and is less conspicuously glandular than the type.

R. lentiginosus Lees. This, as a Kent and Surrey bramble, must be expunged from our lists. I am suggesting in B.E.C. Report for 1928 that Lees' bramble is the same as *R. montanus* Wirtg. =*R. senticosus* Koehl. Our bramble is by no means the same as Lees', and I am publishing a description of it and proposing that it shall be known as *R. nitidioides.* The stations known to me in Kent and Surrey for this are as follows : Keston Common, Holwood, Hayes Common, West Wickham Common, Pickhurst Green, Barnet Wood (Hayes), and Chislehurst Common (v.c. 16); and Wimbledon Common and Putney Heath (v.c. 17). It occurs also in Essex.

A glandular bramble with white flowers, long stamens and pilose anthers, has been recorded as *R. lentiginosus* from several commons in N.W. Sussex, where it accompanies *R. plicatus.* It is clearly not Lees' bramble, nor mine; and I think it is *R. orthoclados* A. Ley. If it is, these Sussex stations link up the Monmouthshire with the Belgian stations.

R. macrophyllus N. and W., although more widely distributed than *R. subinermis* in Britain, is not so general as that in Kent and Surrey. It is, however, locally plentiful, *e.g.,* in the Shooter's Hill—Lessness district. In the typical form in shady woods it is well marked, but puzzling gradations towards other species occur, the explanation of which—whether induced by the surrounding conditions, or produced by crossing with allied species or with *R. adscitus*—must be sought by exploration on the spot or by cultivation under changed conditions. It is a sensitive species, most at home in a moist, half-shady situation. It rarely ventures into the open except under the protection of a hedge, but the opportunity to trace the effects of exposure comes two or three years after the wood in which it grows has been coppiced. What I take to be the type has a thick stem, which emerges erectly from the ground, brown-coloured, and becomes at length purplish. It is blunt-angled in the middle with flat or slightly excavated sides, is rather glaucous, with at first many stiff, simple and clustered hairs, short stellate down, many sessile glands, and rarely an acicle or stalked gland or two. The stem prickles are broad-based, about 4 or 5 mm. long, patent, hairy, and not confined to the angles. Leaves very large, deep olive green and thinly strigose above, paler and shortly hairy beneath, greyish when young, sometimes glabrescent; the teeth shallow and broad, uneven, sinuate finely pointed. The end leaflet may be up to 15 cm. long, is long-stalked, subcordate or only emarginate at the base, ovate with the sides nearly parallel but running gradually into a broad-based acuminate point. The stalks of the basal leaflets are 3-5 mm. long. The petiolar prickles are falcate, and the stipules narrow. The flowering branch leaves are shortly pointed, and the prickles on the rachis straight or falcate and far between. Panicle cylindrical, slightly tapered in strong examples; lax in the lower leafy part; the central branches divided to the base or very nearly. Rachis stout and rigid, clothed with thick felt and short patent hair, hiding a few stalked glands and acicles. Flower buds greenish, greyish or whitish, felted rather than hairy, not aciculate. Pedicels armed with many small acicular prickles. Bracts narrowly linear, inconspicuous. The flowers are not large; petals oval or obovate, white or lilac, with a wide claw and an obtuse apex. Stamens white, much exceeding the green styles. Calyx segments completely reflext in flower and fruit. Young carpels glabrous. Fruit globose, rather large.

R. Schlechtendalii Weihe has a densely hairy, roundish or obtuse-angled flat-sided, fuscous stem, bearing many sessile glands, and declining prickles 6-7 mm. long, not so strong as those of *R. macrophyllus*. Leaves large, yellowish-green, exceptionally strigose above, green and velvety below, margin sharply, rather deeply and evenly, not coarsely toothed. Terminal leaflet up to 15 cm. long, oblong, obovate, with a narrow emarginate or obtuse base and a long cuspidate point: nearly four times as long as its stalk. Petioles with dense patent hair and hooked prickles. Stipules rather broad. Stalks of the based leaflets 2-3 mm. long. Panicle short, broadly pyramidal, the branches long and spreading, and divided about half-way, with long narrow leafy bracts to the top, and some 4-5-nate leaves below. Rachis felted and shortly villose with sunken glands, prickles weak, straight, declining, or falcate; those on the panicle branches and pedicels very weak. Flowers "as large as apple blossom," "like *R. gratus*"; the buds felted and aciculate, depressed, their base flattened and discoid. Petals roundish, notched at the apex, pink (or bleached), claw deep pink, stamens deep pink; exceeding the yellowish green styles; anthers glabrous. Calyx segments shaggy,dotted with short glands, reflext in fruit,on the terminal flower ending in a long leafy, toothed point, the others slenderly cuspidate. Young carpels very pilose. Fruit oblong. I have not recognised this species for certain in either Kent or Surrey, but from its Continental distribution it may be expected to occur in the south-eastern counties. It is said to be tender and to die back in winter nearly to the root, with the result that flowering panicles are often very vigorous and leafy, as is the case usually with panicles that come up from the base of a flowering stem. Focke considers it as the same thing as *R. macrophylloides* Genev., but I am very doubtful whether this is right. *R. Schlechtendalii var. anglicus* Sudre differs in having a sharply angled stem with hollowed sides, only slightly pilose and glabrescent, the inflorescence elongate and eglandular; the panicle prickles strong, peduncles short, anthers pilose and carpels glabrous. I have seen this from Berkshire and from Warwickshire.

R. macrophylloides Genev. has a low-arching blunt-angled hairy stem, prickles spaced out, short and falcate. Leaves 3-5-nate, glabrescent above, rather velvety with dense shining hairs and pectinate on the nerves beneath; the upper leaves greyish felted beneath; petioles short, with strong hooked prickles. Terminal leaflet elliptical oblong or obovate, with an entire base and a long slender point; four times as long as its stalk. Basal leaflets with stalks 1-2 mm. long. Flowering branch bluntly angled, flexuous, felted and villose, with a few weak declining or falcate prickles, and some 4-5-nate leaves with a long elliptical terminal leaflet. Panicle small and short, few-flowered, slightly longer than the upper (sometimes discolorous) leaves; the upper branches short, half erect, 1-flowered; the buds felted and pubescent, not aciculate, slightly glandular. Rachis densely villose, slightly glandular, the glands few, fine, short and inconspicuous; bracteoles broad. Peduncles and pedicels with falcate prickles and scattered glands.Petals large, oval-oblong, pink; stamens and styles also pink; the stamens exceeding the styles in length. Calyx segments short, reflext in fruit. Young carpels glabrous. I have seen an example collected by Beeby from Hedge Court (v.c. 17), in 1885. It has a limited distribution in W. France and might be expected to occur in our southern counties. It must not be confounded with *R. rhombifolius, R. holerythros* or *R. dumnoniensis.*

R. questierii L. and M. Abundant in hedges in and near Halstead village and thence to Polhill, and at the cross roads one mile north of Polhill (v.c. 16), on clay-with-flints. An Atlantic species. The stem is at first erect, strong, angled, more or less sulcate above with a fair quantity of short tufted hairs at first but becoming smooth and shining,and brown, like the prickles. Prickles unequal, robust, long-based, rather strongly declining and falcate.

Leaves glaucescent above, then shining; greenly felted to glabrescent beneath, with prominent veins; leaflets becoming markedly convex. Terminal leaflet narrow oval-oblong or rhomboid, with a long sharp point and obtuse base, and a very short stalk so that it covers or is covered by the edges of the intermediate leaflets, stalks of basal leaflets 2 mm. long. Teeth rather coarse, angular, hardly compound, the principal teeth sometimes turned outwards. Petioles short, stipules filiform, prickles curved. Flowering branch long and flexuous, angled, thickly shortly hairy and felted; with numerous unequal mostly short pale declining and falcate prickles; and with some 3-nate and 5-nate leaves below, which are greenish-greyish felted beneath. Panicles very compound; the lower branches very strong and leafy, narrowly cylindrical, like secondary panicles; the upper branches deeply divided or fascicled; the simple narrow bractiform upper leaves exceeding the branches in length. Rachis, branches and pedicels, petioles and edges of the bracts considerably glandular : the glands are sunken on the rachis, but exceed the felt on the pedicels. Flowers small : petals oval, boldly notched, white; stamens white or pinkish, equalling the styles in length, anthers glabrous. On some bushes the styles are greenish or with a rosy base; on others, reddish throughout. Buds greyish felted and pubescent, glandular and acicular. Calyx segments long ovate acuminate with long, slender tips, completely reflext in fruit and very white within. Fruit small, globose. Receptacle plentifully, but shortly hairy.

R. Colemanni Blox. Bloxam describes his bramble as having a glabrescent stem with many straight, slightly declining prickles scattered over the sides as well as the angles, and with a few stalked glands and prickles : the leaves with nearly sessile, overlapping, basal leaflets, cordate orbicular terminal leaflets, ending in a cuspidate point; a long panicle with stalked glands and strong declining prickles; and sepals reflext in fruit. Bloxam at one time thought this might be *R. infestus* Weihe, and he placed it in the *Caesii,* presumably because of its many nearly patent prickles on the stem, its broadish stipules, broad terminal leaflet and subsessile, imbricate basal leaflets. The leaves have the nerves pectinate with shining hairs beneath, and all the examples that I have seen from Kent and Surrey have at least falcate and often hooked, occasionally even a few geniculate, panicle prickles, and always very hooked prickles on the leaf stalks and midribs. Generally, too, the anthers are pilose. The calyx segments are greyish-green felted and villose with a white edge, inconspicuously glandular and aciculate, and shortly pointed. On Barnes Common (v.c. 17) I have seen it with roundish terminal leaflets as described by Bloxam, but with short and broad panicles; on Wimbledon Common (v.c. 17) I have seen it with short, broad panicles but with cordate-ovate-acuminate leaflets. On Farnborough Common (v.c 16) and in a wood near Lonesome, Mitcham (v.c. 17)—where it was collected by Mr. C. E. Britton in 1901—it has a long panicle and ovate-cordate-acuminate leaflets. The petals, stamens and styles are all pink. I believe that *R. vulgaris f. elatior* G. Braun is our *R. Colemanni.* If it is, our bramble is not endemic, but occurs in W. Germany also. In the shade form this bramble recalls *R. insularis;* in the open heath form, *R. bipartitus.*

R. Sprengelii Weihe and *R. scanicus* Aresch. Certain features of these and of the other *Sprengeliani* they have in common with the *Suberecti,* viz., short, non-connivent stamens, patent fruiting calyces, horizontal petals becoming vaulted. They are of the Atlantic type of distribution, and are allied with S. American rather than other European species.

R. Sprengelii Weihe. A low sprawling bramble common on the heaths and in woods on the Blackheath pebble beds, and on the Lower Greensand range of Kent and Surrey; often growing among heather and whortleberry, and in hedge bottoms. The leaves are plicate, and are often predominantly 3-nate with deep ovate teeth. In shade, particularly, the panicle has a few fine, sunken, stalked glands. The styles are yellowish. The ripe fruit is globose and small, composed of few drupelets, and is clasped by the prolonged calyx segments. The stem may be recognised by its blunt angles clad with single and double, but not clustered hairs, nor felt; and by the prickles, which are somewhat hooked at their extremity. A few pricklets and fine stalked glands are present. The panicle declares itself by its very divaricate, weakly-armed branches, and flat crumpled flowers with short, always spreading stamens. It crosses readily with other species.

R. scanicus Areschoug is a bramble which, if I have correctly identified it, occurs in some plenty over a limited area on Netley Heath (v.c. 17). See the B.E.C. Report for 1928 for further details.

Archaeological Inspections

By G. J. B. FOX

LALEHAM appears in Edward the Confessor's Charter of 1062 to Chertsey Abbey—"ad monasterium quod Ciroteseg noto nuncupatur onomate . . . ii mansas et Laelham". (Kemble IV. 150, 153); there was another Charter, as "Laleham" is mentioned as one of the four appurtenances of Staines in the Charter of Edward the Confessor granting and confirming lands to Westminster Abbey (V.C.H. ii. 397). In Domesday Book is the entry "Stanes tenet abbas Sancti Petri . . . ad hoc manerium pertinent iiii bereuuicæ, et ibi fuerunt t.r. E" (fol. 128a). It is likely that Laleham was one of these berewicks (V.C.H. ii. 397). Other entries read—"Comes de Moritonia tenet in Laleham ii hidas, et Abbas de fiscanno (Fècamp) de eo" (fol. 129a). "Robertus Blundus tenet in Leleham viii hidas de rege" (fol. 130b). So far no church is mentioned, but one may have been erected, by the landowners, judging from the Norman work, c. 1200, and from entries in the P. N. Taxatio of 1291, as follows:—

Bona Abbis Westm':—

In Lalh'm de terr' redd' molend' et cons' £9 4s. 10d. (p.13).

Taxatio Spiritualitatis Archid' London' &c. Midd':—

Ecclia de Stanes cū capella de Lalham. £46 13s. 4d. (p.17).

A wooden structure may have stood on the site of the Roman compitum shown on Sir Montagu Sharpe's map (Ants. of M'sex, p.76), and may have given place to the Norman building of chancel, and nave with aisles.

The present church of All Saints consists of chancel, north chapel, nave, north aisle, and west tower. Much rebuilding and alteration have taken place.

The chancel has lost all traces of Norman work; it is now faced on the exterior with XVIc. brickwork, and its north wall has been removed for a chapel now belonging to the Lucan family, who acquired the Manor in 1803. A picture of Christ walking on the water, by Harlow (died 1819), presented in 1811, which was lighted by a skylight and blocked the east window, has recently been removed to the west end. There is a modern doorway in the south wall. The chancel arch is pointed, of one order, chamfered, and has chamfered abaci. The chapel has cut-brick windows in the north and east walls which have, on the exterior, brickwork of XVIIc. date. It existed before the Lucans bought the Manor, as Lysons mentions a "double chancel".

The nave has a north aisle (rebuilt) and north arcade. The south arcade is built up, the south aisle having been pulled down before Lysons' time (1800); arcades of three bays, late XIIc., pointed arches, massive circular columns with scalloped caps. All the arches have chamfered labels, except that on the north. The label of the central arch of the north arcade has reused billet ornament. In the wall built in the south arcade are two modern XVc. style two-light windows, and a rebuilt XIVe. (?) doorway. The north aisle has three modern windows. A gallery with an organ hiding the west window is at the west end. The oak screen and reredos are modern. The pulpit of 1910 is in memory of Thomas Arnold. The font is modern.

The tower, engaged at the west end of the north aisle, ivy covered, has XVIIIe. brickwork; west doorway and roundheaded windows; with buttresses, plain parapet, clock; three bells by William Eldridge of 1663. Registers date from 1538; the Churchwardens' accounts are an interesting series. Old monuments and brasses have been cleared out. In the churchyard is buried Matthew Arnold, born at Laleham, died 1888.

Church of St. Peter and St. Paul at Godalming.—Visited 2nd. June, 1928.

XIe. Godelminge; XIIIe. Godhalminges, Godeliming; XVIIe. Gollyman; 1647. God Almaigne.

T.R.E. Rectory held by Ulmaer of the king; in Domesday Book by Ranulph Flambard; in 1128 by the deans of Salisbury till the abolition of deans and chapters in 1649; they were reinstated after the Restoration of 1660; advowson finally vested in Bishops of Winchester in 1860.

The church is built of Bargate stone, clunch being used for dressings in later enlargements, and Bath stone in XIXe. The original plan consisted of nave and chancel only; owing to many additions it now includes nave and aisles, central tower and transept, chancel with north and south chapels. Building dates are:—Pre-Conquest (perhaps two), XIIe., XIIIe., XIVe., XVc., XVIe., XIXe.; (possibly twelve different periods of work). The church was severely restored in 1840, and again in 1879 under Gilbert Scott.

The nave in Pre-Conquest times was of two bays only, aisleless. Portions of the walls remain at the extreme east end. c. 1190-1200, north and south aisles were added, and two lofty pointed arches cut in the north and south walls of the Saxon nave, and smaller ones in the west walls of the transepts. The pier on the south is circular; that on the north was originally circular, but later was altered to octangular. The cores of the (present) central piers are Pre-Conquest. The nave and aisles were extended one bay west c. 1400. The west doorway of this date was removed in 1840 to the east wall of the south chapel. The nave roof is old, part at the east end may be XIIIe. The flat panelled ceiling of temp. Henry VII was altered in 1840 to canted shape, but the painted shields with coats of arms were reused. Galleries were put up in XVII-XVIIIe. In 1840 and 1879, nave and aisles were extended west by another bay, the windows being decorated in style. The pulpit contains work of Elizabethan date. The north aisle is longer than the south; its north wall was rebuilt in XIXc.; it had formerly a lean-to roof with dormers of XVII-XVIIIc. date. The south aisle narrows at the east end, and its south wall was also rebuilt in XIXc. when the aisle was widened, but a portion of the XIIIc. wall remains at the east end. The former walls were raised in XVII-XVIIIc. to provide height for a gallery, and a new roof was put on. A west gallery also existed, and one in the north aisle was put up in 1716.

The central tower, 16½ feet square, was built c. 1100 upon the gabled walls of the Pre-Conquest chancel. The east wall of the latter was thickened by a foot, and an arch of two plain orders with chamfered imposts was pierced in it. This arch exists but it was heightened by six feet in 1879; the old imposts, however, were allowed to remain. The original arches exist in the north and south walls. In the apex of the east gable of the nave are two double-splayed eyelets; on the west face the splay is protracted downwards probably to light a roof chamber over the nave; they can be seen in the west wall of the belfry. In XIIIc. the cap was replaced by a spire with oak shingles; the corbels of the contemporary parapet remain. This spire was replaced in XIVc. by the present one of oak, lead covered; broaches were added later when the parapet was removed.

The Edwardian Inventory mentions "V bells in the steple" and "a sauncte bell." There are now eight, recast or made between 1740 and 1874. Before 1850 there was an external sanctus bell at the base of the south east side of the spire; it has heedlessly been removed to the cemetery chapel. It bears the following inscription :—

NM TU CH W R(ichard) P(helps) FECIT 1724.

Transepts were added c. 1120. Traces of windows of that date remain, doorways being pierced respectively in the north and south walls of the Pre-Conquest chancel, the walls also being heightened. In each face are two roundheaded openings, with string below them. A contemporary doorway has been rebuilt in the north wall of the present north transept. c. 1190-1200 the arches between tower and transepts were made pointed and perhaps widened. In the west walls is a Norman loop over the later nave aisles. XIVc. windows (as in the south wall of the south chapel) inserted; XVc. window inserted in the north wall of the north transept and in the south wall of the south transept. Roofs (perhaps XII-XIIIc.) reconstructed. The north transept was lengthened in 1849-70; a piece of old glass with diamond quarries remains. In the south transept there is a chevron incised on the bell of one capital of the moulded arch in the west wall; also XIIc. piscina and remains of sedilia in the south wall.

The original Pre-Conquest arch of the chancel, plain, ten feet wide, of one order, with chamfered imposts, round-head, remained as the west arch of the central tower till it was ruthlessly removed by Scott, and the present arch substituted in 1879. Over this arch was the outline of the gable and weathering of the Pre-Conquest chancel. c. 1100 the chancel was extended east. In XIVc. the east wall of this extension was removed when another extension was made. In each north and south wall of c. 1100 portion are remains of three windows; also the base and part of the jamb of the priest's doorway at the west end of the south wall. The present east window is 1859. The old roof has been reconstructed. There is a triple sedilia (D. or P.) with piscina at the corner of a recess, and round-head aumbry, in the south wall. On the jambs of the c. 1100 windows are painted patterns (zig-zag) round the heads, and other patterns, in red. The chancel inclines north. There is a squint in the south wall. Candelabrum of 1722.

Chancel aisles were added c. 1200 on north and south sides. Arches were pierced in the walls of the c. 1100 chancel, the old windows blocked and tall lancets inserted; the south aisle (or Westbrook Chapel) had five in the south wall and three in the east wall. These windows were altered c. 1250 to grouped lancets with inner plane. In 1270 a window of five lights with bar tracery was placed in the east wall under enclosing arch with hoodmould; a rebuilt XIVc. doorway is now below it. In XIVc. the lancets in the west part of the south wall were blocked and square-headed, three-light windows were inserted (as in the transept and nave aisles). The old roof was reconstructed later with elaborate mouldings. There is a large double piscina with octagonal shafts with cap and base and two aumbries over, of early XIIIc. date; below is a marble table-tomb without inscription, on a chalk and brick base, to the Westbrook family. A font is disused. There is a XIIIc. chest with pin hinges and a money hutch with secret well. There is some old glass, part of a lion, or, in the east window and traces of painted figures c. 1200 on splays of lancets found in 1879; one shows John the Baptist with disc on which is the Agnus Dei. In this aisle are fragments of a Pre-Conquest circular basin or font, showing horses' heads and interlaced work and scrolls; these may have come from an earlier building. On the exterior of the east wall over the buttress at the south-east angle is a stone with circular hole. The north and east walls of the north aisle are modern, also the external turret staircase. The east window is 1859. There is an early XIIIc. piscina and aumbry. The lean-to roof dates from prior to 1840. The communion table with extending leaves is Elizabethan or Jacobean. (In the vestry is another communion table).

There are two brasses, one to Thomas Purvoch and wife, 1509; and the other to John Barker (in armour), 1595. Both are in the chancel. Besides these there are ledgers with brass plates, etc. In the south transept is a tablet to the Rev. Owen Manning, vicar of Godalming and co-editor with Bray of a history of Surrey; he died 1801 and is buried in the churchyard. In the chancel is an alabaster and black marble monument (with kneeling figure) to

Judith Eliot, wife of William Eliot, 1615, with inscription.

Apparently there were two early chapels at Godalming. One at Tuesley is mentioned in 1220 as dedicated to the Virgin Mary; its foundations were found c. 1870. It has been suggested that the Saxons utilised a pagan temple dedicated to the War-God Tew or Tiw, from whom the place name Tuesley is derived. The other at Busbridge, was granted by Edward VI to L. Eliot, as a chapel, and described as "the chapel in Godelmyng called Old Mynster with the cemetery lying round it".

(V.C.H.; Welman; Baldwin Brown; Morris; Stahlschmidt.).

West Horsley.—Visited 13th October, 1928.

In IXc., Horsaleges; in Domesday Book, Orselei; in XIIIc., Horslegh. In IXc. Dux Alfred gave the parish to his wife Werberga; temp. Edward the Confessor it was held by Brixi; in Domesday Book, by Walter son of Other; later by the Windsor and Berners families, by Marquis of Exeter . . . the Raleighs; in 1749 by the Weston family, the present holders.

A church is mentioned in Domesday Book; the present north arcade and north wall of the chancel may be on the site of the walls of that church, which was aisleless and towerless. The present building includes chancel, nave with north and south aisles and south chapel, west tower.

The chancel was rebuilt in the early XIIIc, its north wall probably on line of that of its predecessor, the south wall projecting beyond that of the nave. In the east wall there is a contemporary triplet of lancets with detached inner shafts with moulded caps and bases and pointed rear arches. There are two lancets at north east and south east. A plain string runs below the windows in the east half of the chancel. There is a Purbeck step across the floor, north to south. In the north wall there is also a c1325 three-light window with flowing tracery. In the south wall is a contemporary doorway to the south chapel, of two orders. The chancel arch is pointed with chamfered bases and abaci, and double chamfered jambs. The stalls are returned. The rood screen is early XVIc, of twelve traceried bays. The doorway has double doors and moulded cornice. The open-timbered roof is modern. The tomb below the contemporary three-light window in the north wall, is in recess with cinquefoil arch and crocketed label. The effigy is of a priest in mass vestments, probably a Berners. Further east is the base of another tomb which possibly served as Easter Sepulchre.

The centre line of the nave is fifteen inches north of that of the chancel. There is a north arcade of four bays, with circular columns and half round responds, moulded caps. The bases have watermouldings. The westmost pier has traces of red, the others have been retooled. The west doorway from the tower is

XIIIc; of two chamfered orders, moulded abaci, and hollow-chamfered label. Over it is a modern doorway to a former gallery; semi-circ, plastered roof and old tie-beams.

The north aisle was added in early XIIIc. It was widened later, and the north doorway was rebuilt in the north wall. The windows are modern; that at the east end is high up with wheel tracery. The roof is modern. The north doorway is of three orders; the middle one has an edge roll, the two others are chamfered. There is a hollow chamfered label. The porch is modern. The south aisle was added early XVIc. There are three arches of two orders, with octagonal columns, capitals similar to those in the doorway from the chancel to the south chapel—hollow chamfered bases. Three windows in the south wall are coeval with the arcade; they consist of three lights under a square head. The west window is said to be modern. The south chapel was added XVIc. It is uncertain if it preceded the aisle. The south window of three lights is the original. On the exterior (plastered over) are traces of a vertical joint with the aisle. There are screens on north and west. The chapel contains monuments to the Nicholas family.

The font is early XIIIc. It has a circular bowl, retouched, on modern stem and shafts. The brass chandelier is said to have been presented by William III. It has an inscription and date 1652. It was made at Namur by P. Rock. There is an iron-banded chest in the chapel. In the chancel east window there are two small panels, XIIIc, of the martyrdom of St. Katherine, and of the Last Supper. In the north window, XIVc, there is a figure of man in mail, surcoat with arms; inscription, "Jacobus Berners patronus istius ecclesiæ," and crest. There is an alabaster panel of the Nativity on the south wall of the chancel, XVIc. Two small brasses are on the floor; Martyn Whyth and wife, 1506; Henry Darckham, 1501.

The tower, 12 feet 10 inches square interior, is built up against the west wall, say c1120; its centre line is about one foot north of that of the chancel. It consists of three stages, the two upper ones battered. Its north and south walls are not bonded with the west wall of the nave, so it is later than the nave; exterior not plastered. The west doorway is pointed, jambs with chamfer. There are pointed loops in the east face of the upper stage. The spire is shingled, square in the lower half, octagonal in the upper. The west porch is XIVc. It is made of wood on a wall of flint, stone, brick; cusped bargeboard. Vertical studs at sides are missing. There are three bells; 1645 by Bryan Eldridge; 1687 by William Eldridge; 1621 by Bryan Eldridge.

On the exterior of the church the stonework of the angles and windows has been renewed. The surface is covered with plaster. There is a block of conglomerate at south west angle of s. aisle

Ornithological Records of the London Area

Being a Preliminary List of Birds Observed within 20 miles of
St. Paul's Cathedral

Compiled by the Ornithological Section of the London Natural History Society

PREVIOUS to the amalgamation with the City of London Entomological and Natural History Society in 1914, the recording area of the North London Natural History Society comprised only that section of the present society's area north of the River Thames, and compilation of the records for that area began in 1908. Following the amalgamation, the corresponding section south of the river was scheduled, and compilation began in 1914.

The following have acted as Recorders:—

Mr. C. L. Collenette: from 1908 to July, 1913.
Mr. W. E. Glegg: July, 1913 to March, 1917.
Mr. A. Brown, March, 1917 to February, 1918.
Mr. L. J. Tremayne: February, 1918 to December, 1919.
Mr. A. Brown: December, 1919 to December, 1928.

AREA, SECTIONS AND DIVISIONS.

The outer boundary of the area under examination is a circle of twenty miles radius from St. Paul's Cathedral.

Starting from the Thames North of Egham, the circle passes through Fulmer, Chorley Wood, North of St. Albans, Bengeo, Ware, High Ongar, Shenfield, Tilbury, Northfleet Pier, Ash, Kemsing Church, Crockham Hill, Earlswood Station, Great Bookham Church, Addlestone Church, Egham.

The following particulars of the divisions have been taken from "The Botanical Records of the London Area" (London Naturalist, 1927), with the addition of notes of the water areas where they occur.

The outer boundary and the River Thames are omitted in describing boundaries of divisions.

NORTHERN SECTION (NORTH OF RIVER THAMES).

DIV.	NAME.	BOUNDARIES.	CHARACTERISTIC FEATURES.
1.	Colnbrook	N., Oxford Road; E., River Colne.	Water meadows of River Colne. Fields and mixed woods on higher ground. Some small park lakes.

DIV.	NAME.	BOUNDARIES.	CHARACTERISTIC FEATURES.
2.	Rickmansworth	N. E., Dunstable Road : S.E., River Colne : S.W., Div. 1	Similar to Div. I. Few small lakes.
3.	Hounslow	N., Uxbridge Rd. : E., River Brent : W., Div. I.	Thames Valley. Market gardens and orchards. Staines and Littleton Reservoirs.
4.	Harrow	N., Road from Bushey to Barnet : E., River Brent : S., Div. 3 : W., Div. 1.	Largely open agricultural. Ruislip, Brent and Elstree Reservoirs, Ruislip Woods.
5	Mimms	E., Great North Road : S., Div. 4 : W., Div. 2.	Open and undulating parks and small woods. Elstree Reservoir.
6.	Hampstead	N., Road from Barnet to Enfield : E., New River : W., Divs. 3 and 4.	N. London, urban and suburban, Hampstead Heath, Ken Wood, etc. Public park lakes.
7.	Enfield Chase	E., New River : S., Div. 6 : W., Div. 5.	Small valleys and ridges with much mixed woodland —oak & beech. Few small lakes
8.	Lea Valley	E., Road from Roydon to Waltham Abbey and Walthamstow, L.M.S. Rly. and River Roding : W., New R.	All river valley, with water meadows and market gardens. Lea Valley reservoirs from Walthamstow to Enfield.
9.	Enfield	S.E., R. Roding : S. and W., Div. 8.	Agricultural and old woodlands. Epping Forest. Few small lakes.
10.	Hainault	N. and W., Div. 9 : E., Road from Passingford Bridge to Romford : S., L.N. E.R. main line.	Cultivated fields with remains of ancient woodlands. Few lakes.
11.	Brentwood	S., Railway from Romford to Upminster and Laindon : W., Divs. 9 and 10.	Area of heathland, birch and oak woods. Few small lakes.
12.	Rainham	N., Divs. 10 and 11 : W., River Roding.	Tidal shores of Thames. Grazing marshes. Few lakes.

SOUTHERN SECTION (SOUTH OF RIVER THAMES).

DIV.	NAME.	BOUNDARIES.	CHARACTERISTIC FEATURES.
13.	Weybridge	E., Railway from Hampton Court to junction, and thence to Claygate, etc., to boundary.	Heaths and pine woods. Water meadows of Thames, Wey and Mole. Few small lakes and Molesey Reservoirs.
14.	Wimbledon	E., River Wandle: S., Railway through Morden, Raynes Park to Kingston.	Putney Heath, Wimbledon Common, Richmond Park, etc.; old park lands. Few small lakes and Barnes Reservoirs.
15.	Chessington	N., Div. 14: W., Div. 13: S. and E., Road from Great Bookham Church to Leatherhead Stn., thence footpath and road direct to Ashtead, Epsom, Ewell, Cheam, Sutton, Beddington and River Wandle.	Low-lying agricultural land commons and oak woods. Very little water.
16.	Norwood	W., River Wandle to Waddon; S., main road through Croydon to Coombe Lane and Addington: E., County boundary.	South London and Croydon, urban and suburban. Mitcham Common, Shirley Hills. Few park lakes.
17.	Banstead	W. and N., Divs. 15 and 16: E., Road from Croydon to Merstham: S., Div. 19.	Chalk plateau; large heaths and woods in higher part. Almost waterless.
18.	Caterham	N., Div. 16: E., County boundary: W., Div. 17: S., Div. 19.	High chalk land with deep valleys. Some beech and mixed woods. Practically waterless.
19.	Holmesdale	N., Railway to Reigate, thence road to Merstham (Church), and roads and footpath (Pilgrim's Way) to E. County boundary.	Valley of clay lands with oak woods and sandstone ridges with heaths, birch and pine. Very little water.

DIV.	NAME.	BOUNDARIES.	CHARACTERISTIC FEATURES.
20.	Blackheath	N., Railway from Greenwich through Woolwich to River Cray : W., County boundary : E., R. Cray : S., Road from Addington to Hayes, Coney Hall, Keston Church, thence road and footpath direct to Farnborough, Orpington and R.Cray.	Sandy commons with woodlands. Orchards. Few small lakes.
21.	Kent Marshes	S., Railway from Greenwich through Woolwich and Dartford to Northfleet.	Tidal shores of Thames. Grazing marshes.
22.	Darenth	N., Div. 21 : W., Div. 20 : S., Sevenoaks Road to near Halstead,then N.E. to River Darent up to and along the Chatham main line eastward.	Agricultural land on chalk. Some large mixed woods. Very little water.
23.	North Downs	N., Divs 20 and 22 : W., County boundary : S., "Pilgrim's Way" road and path from Titsey to Kemsing.	High chalk land, agricultural and sparsely populated. Many copses. Valley of Darent.
24.	Westerham	N., Div. 23 : W., County boundary.	Similar to Div. 19.

The records compiled in 1908 for the North, and 1914 for the South, are observations dating from 1887 and 1902 respectively. These details have been either furnished by members (past and present) of the London Natural History Society, or else vouched for by them as being reliable. Records from "British Birds" (Witherby, 1907 *et seq.*) have been included, and where the original record is of special interest and has appeared in any publication, acknowledgment is made, the following abbreviations being used :

L.N. = London Naturalist.
Trans. = Transactions of the London Natural History Society.
B.B. = British Birds.

In the case of rarely recorded species, observers' names are given. Records which are considered doubtful are placed in square brackets.

It must be admitted that little work has been done by members in certain divisions especially south of the River Thames, and in some instances records of even common species have been few.

The following table gives the results to December, 1928, for each division :—

No. of Division	1	2	3	4	5	6	7	8	9	10	11	12
No. of Species Recorded.	58	85	129	108	71	138	106	136	126	85	93	85
No. of Species recorded Nesting	9	33	16	51	8	58	44	57	80	50	50	30

No. of Division.	13	14	15	16	17	18	19	20	21	22	23	24
No. of Species Recorded	83	126	74	61	88	72	75	66	7	17	32	18
No. of Species recorded Nesting	4	34	16	11	19	24	12	8	1	3	2	3

The arrangement, numeration and nomenclature are those of "A Check List of British Birds," by H. F. Witherby, 1924, as amended in "British Birds," 1924, *et seq.*

The 192 species in the Society's records are placed in the following categories according to their status in the Society's area :—

Residents—Birds which remain throughout the year and nest	58
Summer Residents.—Migratory birds which nest ...	26
Winter Residents.—Migratory birds which remain throughout the Winter only	19
Passage-migrants.—Birds which pass through to or from their nesting quarters	2
Double Passage-migrants.—Birds which pass through on their way to and from their nesting quarters, both on the Spring and Autumn movements ...	6
Irregular Visitors.—Birds of nondescript status ...	81

Further records may justify the placing of many species in more than one category, but too little is known of most of these for this to be done at present.

2. **Hooded Crow**, *Corvus cornix cornix*. LINN.

Irregular winter visitor.

5. Near Elstree, 7.10.23 (L.N., 1923, p.17). 6. Chelsea, winter (B.B., Vol 19, p.30). 8. Walthamstow Reservoirs, 30.10.21 (L.N., 1924, p.22); 19.11.27 (L.N., 1927, p.39). 9. Chingford, 4.11.94; Epping Forest, 2.11.19 (Trans., 1919, p.22). 12. Stoneness, near

Grays, 3.12.19, 10.12.19 (Trans., 1919, p.22). 14. Wimbledon Common, 20.2.25 (B.B., Vol 18, p.302); Barnes, 29.10.25 (L.N., 1925, p.32). 17. near Epsom, 26.2.28. 18. Chelsham, 1.5.19.

3. **Carrion Crow**, *Corvus corone corone.* LINN.

Resident.
All divisions except 1, 21 and 24.
Nested in 3, 4, 6, 8, 9, 10, 12, 14, 16 and 22.
Flocks observed at Walthamstow Reservoirs throughout the year (August not recorded), greatest number seen, 76, May 1928.

4. **Rook**, *Corvus f. frugilegus.* LINN.

Resident, common outside Central London.
All divisions except 21 and 24.
Nested in all divisions except 8, 13, 21, 23 and 24.

5. **Jackdaw,** *Colœus monedula spermologus.* (VIEILL.)

Resident, common.
All divisions except 21, 22 and 23.
Nested 4, 8, 9, 10, 11, 14, 17 and 18.

6. **Magpie,** *Pica p. pica.* (LINN.)

Resident, local.
All divisions except 5, 10, 12, 14, 16, 20, 21 and 22.
Nested 6, 9, 11 and 18.
Increased in several areas during and after war period, probably now decreasing.

10. **British Jay,** *Garrulus glandarius rufitergum.* HART.

Resident.
All divisions except 21 and 24.
Nested 4, 6, 7, 9 and 16.

13.—**Starling,** *Sternus v. vulgaris.* LINN.

Resident, abundant.
All divisions except 22 and 24.
Nested 2, 3, 4, 6, 7, 9, 10, 12 and 17.
A feature of London bird life is the large flocks of this species coming to roost on public buildings during autumn and winter.

16. **Hawfinch** *Coccothraustes c. coccothraustes.* (LINN.)

Resident, local.
4, 6, 7, 8, 9 (not uncommon in Epping Forest), 14, 16, 17 & 18.
Nested, 4. Harrow; 9. Epping Forest; 14. Probable, occurs throughout year at Petersham and Richmond Park.

17. **Greenfinch,** *Chloris c. chloris.* (LINN.)

Resident, common.
All divisions except 21, 22 and 24.
Nested 2, 7, 9, 11, 12 and 16.

18. **British Goldfinch,** *Carduelis c. britannica.* (HART.)

Resident, not common, but increasing.
All divisions except 5, 13, 21, 22 and 24.
Nested 4, 6, 7, 8, 9, 10 and 17.

19. **Siskin,** *Carduelis spinus.* (LINN.)

Winter resident, very local and uncommon.
6, 7, 8, 9, Highams Park (almost yearly, Jan. to March), and 14.

21. **Mealy Redpoll,** *Carduelis l. linaria.* (LINN.)

Two records.
6. Hampstead Heath, 29.3.25 (B. Lloyd) (B.B., Vol 19, p.22).
9. Chingford, 29.11.13 (A. G. Hubbard) (Trans., 1914, p.27).

23. **Lesser Redpoll**, *Carduelis linaria cabaret.* (P.L.S. MÜLLER.)

Winter resident, a few remaining to breed.
All divisions except 1, 2, 5, 10, 12, 13, 16, 21, 22, 23 and 24.
Nested 3. 4 (B.B., Vol 1, p.184), 6 (B.B., Vol 2, p.100), 8, and 9 (B.B., Vol 3, pp.161 and 226).

27. **Linnet,** *Carduelis cannabina cannabina.* (LINN.)

Resident, common.
All divisions except 5, 20, 21, 22, 23 and 24.
Nested 2, 4, 6, 7, 8, 9, 10, 11 and 15.

30. **British Bullfinch,** *Pyrrhula p. nesa.* MATH. and IRED.

Resident.
All divisions except 1, 3, 12, 21, 22, 23 and 24.
Nested 2, 4, 6, 7, 8, 9 and 10.

[31. **Scarlet Grosbeak**, *Carpodacus e. erythrinus.* (PALL.)

One record.
6. Winchmore Hill in 1897 (O. G. Pike and P. J. Hanson).]

33. **Common Crossbill,** *Loxia c. curvirostra.* LINN.

Irregular visitor, winter 1908-1909, winter 1909-1910, nesting 1910, winter 1927-1928.

6. West Ealing, 6.8.27 (L.N., 1927, p.40), 9. between Epping and Waltham Abbey, winter 1909-1910, 11. Weald Park, Brentwood, February or March, 1909, 13. Weybridge, nesting in 1910, near Wisley Common, 26.2.28, 16. South Norwood, 25.7.27 (L.N., 1927, p.40), 17. Leatherhead, July to September, 1927 (B.B., Vol 21, p.176), and 20. Keston, 10.4.10 and 17.4.10, Bostall Woods, Woolwich, nesting 19.3.10 and 29.3.10 (Trans., 1917, p.20).

37. **Chaffinch,** *Fringilla c. cœlebs.* Linn.

Resident, common.
All divisions except 21 and 22.
Nested in all divisions except 5, 8, 13, 14, 17, 19, 21, 22, 23, 24.

38. **Brambling,** *Fringilla montifringilla.* Linn.

Winter resident, October to April, has occurred June and July (B.B., Vol 17, p.83, Vol 20, p.149). Some years more numerous than in others.

3, 6, 7, 8, 9, 12, 14, 17, 18.

40. **House-Sparrow,** *Passer d. domesticus.* (Linn.)

Resident, abundant.
All divisions except 21, 24.

Though so common, members have not yet recorded its nesting in 1, 3, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24.

41. **Tree-Sparrow,** *Passer m. montanus.* (Linn.)

Resident, local.
All divisions except 5, 11, 16, 18, 21, 22, 23, 24.
Nested 4, 8, 9, 10, 14.

42. **Corn-Bunting,** *Emberisa c. calandra.* Linn.

Resident, local, has decreased since 1902.
1, 2,3, 4, 6, 8, 9, 10, 12, 17, 18, but recently only 3, 4, 9.
Nested 4. Harrow and near Northolt, 1928, 10. Chigwell, 1906.

43. **Yellow Bunting,** *Emberiza c. citrinella.* (Linn.)

Resident, common.
All divisions except 16, 20, 21, 22, 23, 24.
Nested 4, 7, 9, 10, 18.

47. **Cirl Bunting,** *Emberiza cirlus.* Linn.

Two records.

4. Harrow, nesting in 1928, 23. Shoreham, has not nested for 25 years.

53. **Reed Bunting,** *Emberiza s. schœniclus.* (Linn.)

Resident.
All divisions except 1, 16, 18, 20, 21, 22, 23, 24.
Nested 4, 6, 8, 9, 10, 11, 12, 15.

64. **Wood-Lark,** *Lullula a. arborea.* (Linn.)

Resident, local, first recorded in 1924.

14, Richmond Park, 17. Boxhill and Mickleham Downs, 18. Warlingham.

Nested 17. Boxhill (L.N., 1927, p.19).

65. **Sky-Lark,** *Alauda arvensis arvensis.* Linn.

Resident, common.
All divisions except 21, 22, 24.
Nested 4, 8, 9, 10, 11, 12, 14.

70. **Tree-Pipit,** *Anthus t. trivialis.* (Linn.)

Summer resident.
All divisions except 12, 21, 23.
Nested 9, 10, 15, 18, 19.

71. **Meadow-Pipit,** *Anthus pratensis.* (Linn.)

Resident locally, elsewhere passage-migrant and winter resident.
All divisions except 19, 20, 21, 22, 23.
Nested 9, 10.

75. **Rock-Pipit,** *Anthus spinoletta Petrosus.* (Mont.)

Irregular winter visitor.
3. Staines Reservoirs, 5. Elstree Reservoir, 8. King George Reservoir, Chingford, 12. Grays, 14. Barn Elms Reservoirs.

82. **Yellow Wagtail,** *Motacilla lavo rayi.* (Bonap.)

Summer resident, local.
All divisions except 11, 13, 15, 16, 17, 18, 19, 21, 22, 23, 24.
Nested 1, 8, 12, 14.

83. **Grey Wagtail,** *Motacilla c. cinerea.* Tunst.

Winter resident, but has been recorded for all months.
All divisions except 10, 12, 16, 18, 21, 22, 23, 24.

84. **Pied Wagtail,** *Motacilla alba yarrelli.* Gould

Resident, common.
All divisions except 21, 22, 23, 24.
Nested 2, 3, 8, 9, 10, 11, 12, 14, 15.

85. **White Wagtail,** *Motacilla a. alba.* Linn.

Three occurrences.
14. Barn Elms Reservoirs, 18.4.15 ("The Field," 30.4.25), 26.4.27 and 3.5.27, and Richmond Park, 23.4.27 (L.N., 1927, p.40).

87. **British Tree-Creeper,** *Certhia familiaris britannica.* Ridgw.

Resident.
All divisions except 1, 5, 20, 21, 22, 24.
Nested 2, 4, 6, 7, 8, 9.

90. **British Nuthatch,** *Sitta europœa affinis.* Blyth

Resident.
All divisions except 1, 5, 10, 12, 16, 21, 22, 23, 24.
Nested 2, 8, 9, 14.

92. **British Great Titmouse,** *Parus major newtoni.* PRAZAK

Resident, abundant.
All divisions except 21, 22.
Nested, 4, 6, 9, 10, 11.

94. **British Blue Titmouse,** *Parus cœruleus obscurus.* PRAZAK

Resident, abundant.
All divisions except 21, 23, 24.
Nested 2, 3, 4, 6, 9, 10, 11.

96. **British Coal-Titmouse,** *Parus ater britannicus.* SHARPE and DRESSER

Resident, common.
All divisions except 1, 12, 13, 21, 22, 23, 24.
Nested 8, 9, 14, 17.

101. **British Marsh-Titmouse,** *Parus palustris dresseri.* (STEJN.)

Resident, not uncommon.
All divisions except 1, 3, 12, 16, 21, 22, 23, 24.
Nested 4, 8, 9, 10, 11, 17.

105. **British Long-tailed Titmouse,** *Ægithalos caudatus roseus.* (BLYTH)

Resident, common.
All divisions except 11, 12, 21, 22, 24.
Nested 1, 2, 4, 6, 7, 8, 9, 14, 19.

107. **British Golden-crested Wren,** *Regulus r. anglorum.* HART.

Resident, more common in winter.
All divisions except 5, 21, 22.
Nested 6, 7, 8, 9, 19, 24.

108. **Fire-crested Wren,** *Regulus i. ignicapillus.* (TEMM.)

Two records.

[9. Long Hills, Epping Forest, 10.3.28, 11.3.28 (J. Ross)],17. Tadworth, 21.10.23 (H. Bentham), (B.B., Vol 17, p.165).

111. **Great Grey Shrike,** *Lanius e. excubitor.* LINN.

Irregular winter visitor.

9. Chingford, 1899, 1916 (B.B., Vol 10, p.46), Epping Forest, 1919-1920 (B.B., Vol 13, p.247, Vol 14, p.21), 1927 (L.N., 1927, p.39), 14. Ham Common, April to June, 1920 (B.B., Vol 14, pp. 21 and 45), 16. Walton on the Hill, 1922 (B.B., Vol 17, p.165).

116. **Red-backed Shrike,** *Lanius c. collurio.* LINN.

Summer resident.
All divisions except 1, 2, 5, 16, 20, 21, 22, 23, 24.
Nested 3, 4, 6, 7, 8, 9, 10, 12, 14 ,18, 19.

117. **Waxwing,** *Bombycilla garrulus.* (LINN.)

Irregular winter visitor.

7. Haileybury, 12.4.14 to 16.4.14 (B.B., Vol 7, p.321), 9. near Epping, 1908, Walthamstow, 19.1.24 to 21.1.24 (B.B., Vol 17, p.31), 11. round Pilgrim's Hatch, 20. Beckenham, 1.3.24 (B.B., Vol 17, p.275).

118. **Spotted Flycatcher,** *Muscicapa s. striata.* (PALL.)

Summer resident.
All divisions except 12, 20, 21, 22, 23, 24.
Nested 2, 4, 6, 7 ,8, 9, 10, 11, 13, 14, 16, 19.

120. **Pied Flycatcher**, *Muscicapa h. hypoleuca.* (PALL.)

One record.

11. Thorndon Park, Brentwood, May, 1907 (D. M. Meares) (L.N., 1922, p.14).

123. **Chiffchaff,** *Phylloscopus c. collybita.* (VIEILL.)

Summer resident, common.
All divisions except 21, 24.
Nested 9, 11, 16.

126. **Willow-Warbler,** *Phylloscopus t. trochilus.* (LINN.)

Summer resident, abundant.
All divisions except 21, 24.
Nested 2, 4, 5, 6, 7, 8, 9, 10, 11, 14, 15, 18.

129. **Wood-Warbler,** *Phylloscopus s. sibilatrix.* (BECHST.)

Summer resident.
All divisions except 1, 3, 5, 10, 11, 12, 15, 21, 22, 23.
Nested 2, 6, 8, 9, 18.

139. **Grasshopper-Warbler,** *Locustella nævia nævia.* (BODD.)

Irregular summer visitor, chiefly in May.
4, 7, 8, 9, 11, 15, 18.

143. **Reed-Warbler,** *Acrocephalus s. scirpaceus.* (HERM.)

Summer resident, not common.
3, 5, 6, 7, 8, 9, 10, 11, 12, 14.
Nested 8, 10, 11, 12, 14.

144. **Marsh-Warbler,** *Acrocephalus palustris.* (BECHST.)

One record.

6. Kensington Gardens, 5.6.24 (H. J. Alexander) (B.B., Vol 18, p.242).

146. **Sedge-Warbler,** *Acrocephalus schœnobænus.* (LINN.)

Summer resident.
2, 4, 6, 7, 8, 9, 10, 11, 12, 14, 15.
Nested 4, 6, 8, 10, 11, 12.

147. **Aquatic Warbler,** *Acrocephalus paludicola.* (Vieill.)
One record.
3. Staines Reservoirs, 7.9.24 (D. Gunn) (L.N., 1924, p.37).

153. **Garden Warbler,** *Sylvia borin.* (Bodd.)
Summer resident, common.
All divisions except 1, 5, 15, 16, 20, 21, 22, 23, 24.
Nested 6, 7, 8, 9, 11.

154. **Blackcap,** *Sylvia a. atricapilla.* (Linn.)
Summer resident, common.
All divisions except 1, 3, 15, 16, 21, 22, 23, 24.
Nested 4, 6, 7, 9, 17, 18.

155. **Whitethroat,** *Sylvia c. communis.* Lath.
Summer resident, common.
All divisions except 21, 22, 23, 24.
Nested 4, 7, 9, 10.

156. **Lesser Whitethroat,** *Sylvia c. curruca.* (Linn.)
Summer resident, not uncommon.
All divisions except 16, 20, 21, 22, 23, 24.
Nested 2, 4, 9, 14.

160. **Dartford Warbler,** *Sylvia undata dartfordiensis.* Lath.
Two records.
7. within 3 miles of Enfield, breeding in 1896 (P. J. Hanson), 17. Walton Heath, in autumn, 1915 (C. S. Meares) (Trans., 1917, p.20).

164. **Fieldfare,** *Turdus pilaris.* Linn.
Winter resident, common.
All divisions except 11, 20, 21, 22, 23, 24.

165. **Mistle-Thrush,** *Turdus v. viscivorus.* Linn.
Resident, common.
All divisions except 21, 22, 23.
Nested 2, 6, 8, 9, 11, 18.

167. **British Song-Thrush,** *Turdus philomelus clarkei.* Hart.
Resident, very common.
All divisions except 21, 22, 24.
Nested in all divisions except 8, 13, 16, 19, 20, 21, 22, 23, 24.

169. **Redwing,** *Turdus musicus.* Linn.
Winter resident, common.
All divisions except 5, 21, 22, 23, 24.

172. **Ring-Ouzel,** *Turdus torquatus torquatus.* LINN.

Three records.

6. Winchmore Hill, 30.9.07 to 4.10.47, Hampstead, 25.9.28, 8. Springfield Park, 27.9.24.

174. **Blackbird,** *Turdus m. merula.* LINN.

Resident, very common.
All divisions except 21, 22, 23.
Nested in all divisions except 13, 16, 19, 20, 21, 22, 23, 24.

176. **Wheatear,** *Œnanthe œ. œnanthe.* (LINN.)

Double passage-migrant, has bred.
All divisions except 1, 2, 5, 11, 13, 16, 19, 20, 21, 22, 23, 24.

Nested 4. Edgware, 1920 (J. E. S. Dallas) (Trans., 1920, p.26). 14. Richmond Park, 1907 (D. M. Meares), 18. near Addington, 1902 (D. M. Meares).

Some of the records of the species may refer to the Greenland sub-species *Œnanthe œnanthe leucorrhoa* (GMEL.)

[177. **Greenland Wheatear,** *Œnanthe œ. leucorrhoa.* (GMEL.)

Double passage-migrant, rarely identified.

6. near Highgate Ponds, 10.4.27 (Mrs. Boyd Watt), a probable in Kensington Gardens, 24.4.28 (Miss M. B. H. Deane), 12. Grays, September, 1907 (P. W. Horn).]

186. **Whinchat,** *Saxicola r. rubetra.* (LINN.)

Summer resident, local.
All divisions except 1, 11, 13, 16, 17, 18, 19, 21, 22, 23, 24.
Nested 2, 6, 8, 9, 10, 14.

187. **British Stonechat,** *Saxicola torquata hiberans.* (HART.)

Resident, local.
All divisions except 1, 10, 16, 21, 23, 24.
Nested 4, 8, 9, 11, 14, 18, 22.

189. **Redstart,** *Phœnicurus p. phœnicurus.* (LINN.)

Summer resident, local.
2, 3, 4, 6, 7, 8, 9, 10, 14, 19, 20.
Nested 6, 9, 14.

190. **Black Redstart,** *Phœnicurus ochrurus gibraltariensis.* (GMEL.)

Irregular visitor.

6. The grounds of the Natural History Museum, South Kensington, one male, 27.4.27 to 16.9.27, one female, 30.4.27 to 16.5.27 (B.B., Vol 21, p.129), 9. Woodford, March, 1907, 14. Hurlingham, 19.10.24 ("Field" of 30.10.24), Barn Elms Reservoirs about 16.7.27, 16. Thornton Heath, 21.10.10 (Trans. 1919, p.22), 17. Tadworth, one male, 19.3.22 to 25.3.22, young male, 20.5.22 (B.B., Vol 16, pp.49, 50).

191. **Nightingale,** *Lusciana m. megarhyncha.* Brehm.

Summer resident, local.
All divisions except 5, 16, 20, 21, 22, 24.
Nested 6, 9, 11, 19.

197. **British Robin,** *Erithacus rubecula meophilus.* Hart.

Resident, abundant.
All divisions except 21, 23.
Nested 4, 5, 6, 8, 9, 10, 11, 12, 14, 18.

200. **British Hedge Sparrow,** *Prunella modularis occidentalis.* Hart.

Resident, abundant.
All divisions except 21, 22, 23.
Nested 7, 9, 10, 11, 12, 15, 17.

201. **Wren,** *Troglodytes t. troglodytes.* (Linn.)

Resident, abundant.
All divisions except 21, 23, 24.
Nested 2, 4, 6, 7, 8, 9, 10, 11, 12, 14, 17.

205. **British Dipper,** *Cinclus c. gularis.* (*Latham*)

Three records.

3. Hampton Wick, 11.11.08 (T. E. Legg), 5 or 7, near Hatfield, 5.4.16 (W. Rowan), (B.B., Vol 10, p. 43), 9. Higham Lake, 18.9.08 (T. E. Legg).

207. **Swallow,** *Hirundo r, rustica.* Linn.

Summer resident, common.
All divisions except 21, 23, 24.
Nested 2, 6, 7, 8, 9, 10, 11, 12, 17.

209. **Martin,** *Delichon u. urbica.* (Linn.)

Summer resident, very common.
All divisions except 21, 22, 23.
Nested in 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 14, 17.

210. **Sand Martin,** *Riparia r. riparia.* (Linn.)

Summer resident, local.
All divisions except 1, 5, 15, 16, 18, 20, 21, 22, 23, 24.
Nested 2, 4, 6, 7, 8, 9, 10, 11, 12, 19.

212. **Swift,** *Apus a. apus.* (Linn.)

Summer resident, common.
All divisions except 1, 21, 24.
Nested 6, 7, 9, 10, 11, 12, 18.

214. **Nightjar,** *Caprimulgus e. europæus.* Linn.

Summer resident, decreasing.
2, 4, 6, 7, 8, 9, 10, 11, 17, 18, 19.
Nested 6, 8, 9, 10, 11, 18.

218. **Hoopoe,** *Upupa e. epops.* LINN.

One record.
6. Southgate, one shot in May, 1907, by A. Myford, identified by P. J. Hanson.

220. **Kingfisher,** *Alcedo atthis ispida.* LINN.

Resident.
All divisions except 5, 16, 18, 21, 22, 24.
Nested 4, 6, 7, 9, 11, 12, 14, 19.

221. **Green Woodpecker,** *Picus viridis virescens.* (BREHM)

Resident, common.
All divisions except 16, 21, 22, 24.
Nested 9, 12, 17.

223. **British Great Spotted Woodpecker,** *Bryobates major anglicus,* (HART.)

Resident.
All divisions except 1, 3, 5, 19, 21, 22, 24.
Nested 4, 6, 8, 9, 11, 14, 20.

224. **British Lesser Spotted Woodpecker,** *Dryobates minor comminutus.* (HART.)

Resident.
All divisions except 5, 12, 16, 18, 19, 21, 23, 24.
Nested 2, 3, 4, 6, 8, 9, 11, 20.

225. **Wryneck,** *Jynx t. torquilla.* LINN.

Summer resident, has decreased.
All divisions except 5, 10, 12, 16, 21, 23, 24.
Nested 6, 7, 8, 9, 11, 18.

226. **Cuckoo,** *Cuculus canorus canorus.* LINN.

Summer resident, common.
All divisions except 21, 24.
Nested 4, 6, 7, 8, 9, 10, 12, 15.

[231. **European ? Hawk Owl,** *Surnia ulula.* LINN.? subspecies.

One probable occurrence.
13. West Molesey Reservoir, 27.12.26 (W. Kay Robinson and R. W. Heenan) (B.B., Vol 20, p.226).
It is mentioned here, but the species has not been added to the Society's list (L.N., 1927, p.53).]

234. **Little Owl,** *Athene noctua vidalii.* A. E. BREHM

Resident, common and increasing.
All divisions except 13, 21, 22, 23, 24.
Nested 4, 6, 7, 8, 9, 11, 19.

236. **Long-eared Owl,** *Asio o. otus.* (LINN.)

Probable resident, not recorded since 1913.
6, 7, 8, 9, 16, 20.

237. **Short-eared Owl,** *Asio f. flammeus.* (PONTOPP.)

Two records.

8. Sewage Farm, Angel Road, Edmonton, one shot about 1908 by, and in collection of, W. Joyce, identified by W. E. Glegg, 12. West Thurrock Marsh, 24.10.20 (P. W. Horn) ("Essex Naturalist," Vol 19, p.266).

239. **British Tawny Owl,** *Strix aluco sylvatica.* SHAW

Resident, common.
All divisions except 1, 5, 13, 15, 20, 21, 22, 23, 24.
Nested 2, 6, 8, 9, 10, 11, 16, 17, 18.

240. **White-breasted Barn Owl,** *Tyto alba alba.* (SCOP.)

Resident.
All divisions except 1, 2, 3, 13, 14, 15, 19, 21, 22, 23, 24.
Nested 6, 8, 9, 10, 12.

245. **Peregrine Falcon**, *Falco p. peregrinus.* TUNST.

Irregular visitor.

6. Over Brompton Road, Kensington, 26.2.22 (Lewis R. W. Loyd) (B.B., Vol 15, p.270), over Grosvenor Place, S.W., 3.3.28 (Hon. Guy Charteris and N. B. Kinnear) 7. Barnet, 5.4.19 (H. Kirke Swann) (B.B., Vol 13, p.31), 17. over Epsom Downs (H. Bentham) (B.B., Vol 19, p.211).

247. **Hobby,** *Falco s. subbuteo.* LINN.

Two records.

3. Staines, two, 7.9.27 (J. P. Hardiman) (B.B., Vol 21, p. 205), 7. Enfield, early Sept., 1921 (R. B. Lodge) (L.N.,1922, p.15).

248. **Merlin,** *Falco columbarius æsalon.* TUNST.

One record.

9. Theydon Bois, 20.1.18 (F. J. Stubbs) (L.N., 1918, p.17).

249. **Kestrel,** *Falco t. tinnunculus.* LINN.

Resident.
All divisions except 20, 21, 22, 24.
Nested 6, 8, 9, 10, 18.

255. **Common Buzzard,** *Buteo b. buteo.* (LINN).

Irregular visitor.

6. Over Hyde Park, early Oct., 1926 (B.B., Vol 20, p.228), 7. over New Barnet, 8.10.20 (B.B., Vol 14, p.136), 9. Epping Forest, 12.3.24, 15.3.24 ("Essex Naturalist," Vol 21, p.132), 20.3.27 (L.N., 1927, p.39), 12. Ilford, 1916, 1917 (B.B., Vol 9, p.212), 1918, 1919 (L.N., 1919, p.23), 16. over Dulwich, 27.8.22 (B.B., Vol 16, p.116), 17. over Epsom Downs and Tadworth, 14.6.22 (B.B., Vol 16, p.220), 1.10.22 (B.B., Vol 16, p.191), 3.10.25 (B.B., Vol 19, p.211), 20. over Hayes Common, 20.6.25 (B.B., Vol 20, p.55).

262. **Sparrow-Hawk,** *Accipiter n. nisus.* (Linn.)

Resident.
All divisions except 1, 3, 5, 12, 13, 15, 16, 21, 22, 23, 24.
Nested 7, 9, 10, 11, 18, 20.

265. **White-tailed Eagle,** *Haliœtus albicilla.* (Linn.)

One record.
11. Over Weald Hall Park, Brentwood, 6.2.09 (C. J. H. Tower) (B.B., Vol 2, p.383).

267. **Osprey,** *Pandion h. haliœtus.* (Linn.)

One record.
11. Weald Hall Park, Brentwood, 11.10.03 to 24.10.03 (C.J.H. Tower) (B.B., Vol 2, p.383).

274. **Common Heron,** *Ardea c. cinerea.* Linn.

Resident.
All divisions except 15, 20, 21, 22, 24.
Nested 1. Bangor's Park, Iver, and Black Park, Langley, 2. Grove Park, Watford (1901), 7. Hadley (1904), 8. Walthamstow Reservoirs, 9. Wanstead Park, 14. Richmond Park.

282. **Bittern,** *Botaurus s. stellaris.* (Linn.)

Two records.
7. One shot near Whitewebbspark Wood, winter 1903, by C. Lock (identified by P. J. Hanson), 9. one shot at Chingford, 17.1.14, in collection of W. W. Hartwell (identified by W. E. Glegg).

287. **Mute Swan,** *Cygnus olor.* (Gmel.)

Resident.
All divisions except 16, 17, 18, 21, 22, 23, 24.
Nested 6, 7, 8, 9, 10, 11, 13, 14, 15, 19.
Probably majority are partly or wholly domesticated.

288. **Grey Lag Goose.** *Anser anser.* (Linn.)

One record.
9. One on Eagle Pond, Snaresbrook, 7.2.19, 8.2.19 (C. E. Baker) (L.N., 1924, p.40)

289. **White-fronted Goose,** *Anser albifrons.* (Scop.)

One record.
9. Theydon Bois, winter 1917-1918 (F. J. Stubbs) (Trans. 1918, p.17).

298. **Sheld-duck,** *Tadorna tadorna.* (Linn.)

Three occurrences.
3. Staines Reservoirs, two, 6.10.28 to 11.11.28, 8. Walthamstow Reservoirs, 8.1.07, 14. Barn Elms Reservoirs, eight, 13.9.26 (L.N., 1926, p.54).

300. **Mallard**, *Anas p. platyrhyncha.* Linn.

Resident.
All divisions except 1, 17, 18, 19, 20, 22, 23, 24.
Nested 2, 6, 7, 8, 9, 14, 15, 16.

301. **Gadwall,** *Anas strepera.* Linn.

Irregular visitor, but one male is a resident.

3. Staines Reservoirs, pair, 22.4.28 (D. Gunn) ,6. Hyde Park and Kensington Gardens, one male was a regular winter visitor from 1920, but stayed throughout 1927 and 1928. A second male seen, autumn 1922 (G. C. Low) (B.B., Vol 17, p.193), 11. Navestock Lake, two, 7.11.20 (W. E. Glegg) (B.B., Vol 14, p.188).

302. **Teal,** *Anas c. crecca.* Linn.

Winter resident.
3, 4, 5, 6, 7, 8, 9, 11, 13, 14.

305. **Garganey,** *Anas querquedula.* Linn.

One record.

14. Barn Elms Reservoirs, pair, 31.3.28 (J. P. Hardiman and H. N. Southern).

306. **Wigeon,** *Anas penelope.* Linn.

Winter resident, but has been seen in all months except July and August.

3, 4, 5, 6, 8, 9, 11, 13, 14.

308. **Pintail,** *Anas acuta acuta.* (Linn.)

Irregular winter resident, uncommon.

3. Staines Reservoirs, 1926, 1927, 1928, 8. Walthamstow Reservoirs, one, 12.9.25, 9. Connaught Water, Chingford, one male, 26.1.13 to 5.2.13 (B.B., Vol 6, p.314), 14. Richmond Park, one male, Jan., 1927, Jan. to March, 1928.

309. **Shoveler,** *Spatula clypeata.* (Linn.)

Has been seen in all months of the year.

3. Staines Reservoirs, each winter, 1923 to 1928, also 8.6.27, 6. Highgate Ponds, pair, 17.10.25, 8. Walthamstow Reservoirs each autumn, 1921 to 1925, also, a pair, 1.3.24 to 9.8.24, 9. Theydon Bois, 20.4.19, Strawberry Hill Pond, Epping Forest, 3.9.23, 14. Grove Park, one male, 27.5.27, Barn Elms Reservoirs, 28.3.26, one to four, 11.10.26 to 5.1.27, Richmond Park, five, 15.1.28.

310. **Red-crested Pochard,** *Netta rufina.* (Pall.)

One record.

8. Walthamstow Reservoirs, one male, 16.2.24 (W. E. Glegg) (B.B., Vol 17, p.310).

311. **Common Pochard,** *Nyroca f. ferina.* (Linn.)

Winter resident, has bred twice.

2, 3, 4, 5, 6, 7, 8, 9, 11, 13 ,14, 19.

Nested 8. Walthamstow Reservoirs, 1923 (L.N., 1923, p.17), 14. Barn Elms Reservoirs, 1927 (L.N., 1927, p.41).

[312. **Ferruginous Duck,** *Nyroca n. nyroca.* (Guld.)

One probable record.

3. Staines Reservoirs, pair, 4.9.28 (T. H. Harrisson) (B.B., Vol 22, p.144).]

313. **Tufted Duck,** *Nyroca fuligula.* (Linn.)

Winter resident, a few pairs regularly stay to breed.

All divisions except 1, 10, 12, 15, 17, 18, 20, 22, 23, 24.

Nested 6, 8, 9, 14.

314. **Scaup-Duck,** *Nyroca m. marila.* (Linn.)

Irregular winter visitor, has occurred twice in summer at Walthamstow Reservoirs.

3. Staines Reservoirs, 4. Brent Reservoir, 6. Round Pond, Kensington Gardens, Hyde Park, 8. Walthamstow Reservoirs, one male, 9.3.24, to 12.10.24, and 4.4.25 to 15.8.25, 12. West Thurrock, 13. Molesey Reservoirs, 14. Barn Elms Reservoirs.

315. **Goldeneye,** *Bucephala c. clangula.* (Linn.)

Winter resident.

3. Staines Reservoirs, 6. Kew, 8. Walthamstow Reservoirs, 9. King George Reservoir, Chingford, 13. Molesey Reservoirs, 14. Barn Elms Reservoirs.

317. **Long-tailed Duck,** *Clangula hyemalis.* (Linn.)

One record.

14. Barn Elms Reservoirs, one, 13.11.28 to 15.12.28 (see also B.B., Vol 22, p.191).

320. **Common Eider,** *Somateria m. mollissima.* (Linn.)

One record.

9. and 12. On the Roding at Ilford, seven, 21.2.17, ten, 10.3.17 (C. Murray) (B.B., Vol 11, p.234).

322. **Common Scoter,** *Oidemia n. nigra.* (Linn.)

Irregular visitor.

3. Staines Reservoirs, one, 13.4.22 (B.B., Vol 16, p.25), one, 21.11.26 (L.N., 1926, p.54), 3. Ruislip Reservoir, two, 24.4.09 (B.B., Vol 3, p.415), 6. Primrose Hill, one, 29.12.27 (B.B., Vol 21, p.236), Long Water, Kensington Gardens, pair, 13.4.28 (B.B., Vol 22, p.24).

323. **Velvet-Scoter,** *Oidemia f. fusca.* (Linn.)

Two records.

3. Staines Reservoir, one, 13.12.27 (J. W. Castle), 14. Barn Elms Reservoirs, one, 3.12.27 (D. Gunn), probably the same bird.

325. **Goosander,** *Mergus merganser merganser.* Linn.

Winter resident.

3. Staines Reservoirs, 6. Hyde Park and St. James's Park (B.B., Vol 21, p.262), 8. Walthamstow Reservoirs, 13. Molesey Reservoirs, 14. Barn Elms Reservoirs and Richmond Park.

326. **Red-breasted Merganser,** *Mergus serrator.* Linn.

Two records.

3. Staines Reservoirs, four, 18.2.22 (C. A. Gladstone and K. Fisher) (B.B., Vol 116, p.25), 6. Hyde Park, one male, 12.2.22 (C. A. Cresswell) ("Field" of 25.2.22).

327. **Smew,** *Mergus albellus.* Linn.

Winter resident.

9. Staines and Hampton Reservoirs, 4. Ruislip Reservoir, 6. Hyde Park, 8. Walthamstow Reservoirs, 13. Molesey Reservoirs, 14. Barn Elms and Lonsdale Road Reservoirs, Richmond Park.

329. **Cormorant,** *Phalacrocorax c. carbo.* (Linn.)

Irregular visitor.

3. Staines Reservoirs, Littleton Reservoir, 6. Highgate Ponds, 8. Walthamstow Reservoirs, 14. Barn Elms Reservoirs.

330. **Shag,** *Phalacrocorax a. aristotelis.* (Linn.)

One record.

8. In the Wapping Basin, London Docks, one, 12.1.26 (T. M. Blagg) (L.N., 1926, p.53).

331. **Gannet,** *Sula bassana.* (Linn.)

One record.

8. One hit some overhead wires and was caught alive, Stratford, 24.11.11 (C. Murray).

333. **Leach's Fork-tailed Petrel,** *Oceanodroma l. leucorrhoa.* (Vieill.)

One record.

6. Winchmore Hill, one found shot, Dec. 1907, in collection of Mr. Paulin (identified by P. J. Hanson) (L.N., 1926, p.45).

351. **Great Crested Grebe,** *Podiceps c. cristatus.* (Linn.)

Summer resident, some remaining for winter, but numerous at the West London Reservoirs, Aug. to Dec.

2, 3, 4, 5, 6, 8, 9, 11, 13, 14, 20.

Nested 4, 5, 6, 8, 11, 13, 14, 20.

Largest number seen together, 205 at Staines Reservoirs, 9.9.23.

352. **Slavonian Grebe,** *Podiceps auritus.* (Linn.)

Irregular visitor, but one appears regularly each winter at Staines Reservoirs.

3. Staines Reservoirs, 8. Walthamstow Reservoirs, 14. Barn Elms Reservoirs.

353. **Red-necked Grebe,** *Podiceps g. griseigena.* (Bodd.)

Irregular visitor.

3. Staines Reservoirs, 6. Highgate Ponds, 8. Walthamstow Reservoirs, 14. Barn Elms Reservoirs.

354. **Black-necked Grebe,** *Podiceps n. nigricollis.* Brehm.

Irregular visitor.

3. Staines Reservoirs, 5. Elstree Reservoir, 6. Regents Park 8. Walthamstow Reservoirs, 14. Barn Elms Reservoirs.

358. **Little Grebe,** *Podiceps r. ruficollis.* (Pall.)

Resident.

All divisions except 10, 18, 20, 21, 22, 23, 24.

Nested 1, 2, 3, 4, 6, 7, 8, 9, 15, 19.

356. **Great Northern Diver**, *Colymbus immer.* Brunn.

One record.

3. Staines Reservoirs, one, 6.11.27 (D. Gunn, J. W. Castle, F. R. Finch and W. Gardain).

358. **Black-throated Diver,** *Colymbus a. arcticus.* Linn.

One record.

3. Staines Reservoirs, one, 6.12.27 (D. Gunn), and one, 13.12.27 (J. W. Castle).

359. **Red-throated Diver**, *Colymbus stellatus.* Pontopp.

Irregular visitor, rare.

8. Walthamstow Reservoirs, one, shot in Nov. 1911 by Mr. Dakin, skin now in Essex Museum, Stratford; one, 16.2.24, two, 3.3.24, one, 15.11.24 (W. E. Glegg) (L.N., 1924, p.39, 1925, p.35), 14. Richmond Park, one in Feb. and March, 1921 (Miss G. M. Towsey and J. E. S. Dallas), (B.B., Vol 14, p.261).

360. **Wood-Pigeon,** *Columba p. palumbus.* Linn.

Resident, common, especially in the Parks.

All divisions except 21, 22.

Nested 2, 6, 7, 8, 9, 10, 11, 12, 16.

361. **Stock-Dove,** *Columba œnas.* Linn.

Resident.

All divisions except 13, 16, 18, 19, 20, 21, 22, 23, 24.

Nested 6, 9, 10, 11.

363.—**Turtle-Dove,** *Streptopelia t. turtur.* (Linn.)

Summer resident.
All divisions except 12, 16, 21, 22, 23, 24.
Nested 1, 2, 3, 4, 6, 7, 10, 17, 18.

365. **Pallas's Sand-Grouse,** *Syrrhaptes paradoxus.* (Pall.)

One record.

4. Hendon, one flying over, 23.9.07 (W. Wells Bladen) (B.B., Vol 1, p.190).

366. **Stone-Curlew,** *Burhinus œ. œdicnemus.* (Linn.)

Two records.

9. Near Passingford Bridge, 10.3.97 (J. A. Simes), Friday Hill, Chingford, 20.10.01 (W. Hartwell).

370. **Oyster-Catcher,** *Hæmatopus o. ostralegus.* Linn.

One record.

14. Barn Elms Reservoirs, one, 30.8.27 (L. Parmenter) (B.B., Vol 21, p.129).

373. **Ringed Plover,** *Charadrius h. hiaticula.* Linn.

Double-passage migrant, has nested.
3, 4, 6, 8, 14.

Nested 8. Edmonton Sewage Farm in 1901 (R. B. Lodge) ("Zoologist," Oct., 1901, p.389).

378 or 9. **Golden Plover,** *Charadrius apricarius.* Linn.

Irregular winter visitor.

3. Staines Reservoirs and near Stanwell, 8. Walthamstow Reservoirs, 9. Loughton, Theydon Bois, Theydon Garnon, Stanford Rivers, 10. Romford.

382. **Grey Plover,** *Squatarola s. squatarola.* (Linn.)

One record.

3. Staines Reservoirs, six, 9.4.22 (K. Fisher) (B.B., Vol 16, p.26).

384. **Lapwing,** *Vanellus vanellus.* (Linn.)

Winter resident and to a lesser extent resident.
All divisions except 21, 22.
Nested 2, 4, 9 ,10, 11, 12, 17.

387. **Ruff,** *Philomachus pugnax.* (Linn.)

Irregular visitor.

3. Littleton Reservoir, one immature male or more probably female, 8.8.28 (W. E. Glegg and J. P. Hardiman) (B.B., Vol 22, p.146), 8. Lower Edmonton Sewage Farm (R. B. Lodge), Angel Road, Edmonton, Sewage Farm, pair shot, 4.9.15, in collection of W. W. Hartwell (Trans., 1915, p.24).

388. **Sanderling,** *Crocethia alba.* (PALL.)

Two records.

3. Staines Reservoirs, one, 4.9.28 (T. H. Harrisson), 4. and 6. Brent Reservoir, one, 12.9.28 (L. Parmenter) (B.B.,Vol 22, p.168).

389. **Knot,** *Calidris canutus canutus.* (LINN.)

One record.

3. Staines Reservoirs, two, 10.9.27 (J. P. Hardiman) (B.B., Vol 21, p.205).

390 or 390a. **Dunlin**, *Calidris alpina.* (LINN.)

Irregular visitor.

3. Staines Reservoirs, 4 and 6. Brent Reservoir, 8. Walthamstow Reservoirs and Lower Edmonton Sewage Farm, 12. Dagenham Lake, West Thurrock, 14. Barn Elms Reservoirs.

391. **Curlew-Sandpiper,** *Calidris testacea.* (PALL.)

Two occurrences.

3. Staines Reservoirs, one, 7.9.27, two, 10.9.27 (B. B., Vol 21, p.205), 4. and 6. Brent Reservoir, two, 12.9.28 to 17.9.28 (B.B., Vol 22, p.168).

405. **Common Sandpiper,** *Tringa hypoleucos.* LINN.

Double-passage migrant.

2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 14.

One bird stayed throughout the winter, 1927-1928, at Walthamstow Reservoirs.

407. **Wood-Sandpiper,** *Tringa glareola.* LINN.

One record.

3. Staines Reservoirs, one, 17.8.27, two, 18.8.27 (R. W. Hayman) (L.N., 1927, p.38).

408. **Green Sandpiper,** *Tringa ochropus.* LINN.

Irregular visitor, has occurred in Feb., April, July, August, Sept., Oct., Dec.

2, 3 ,7, 8, 9, 12, 14.

412. **Common Redshank,** *Tringa totanus totanus.* (LINN.)

Resident.

3, 4, 6, 7, 8, 9, 10, 11, 12, 14, 21.

Nested 4, 8, 9, 10, 11, 12, 21.

415. **Greenshank,** *Tringa nebularia.* (GUNN.)

Autumn passage migrant.

3. Staines Reservoirs, 4. and 6. Brent Reservoirs, 8. Edmonton, Walthamstow Reservoirs, 12. Dagenham Lake, Barking, 14. Barn Elms Reservoirs.

418. **Grey Phalarope,** *Phalaropus fulicarius.* (Linn.)

One record.

8. Edmonton, one, 18.11.05, shot by, and in collection of, W. Hartwell. [3. Staines Reservoirs, one, 15.8.28 (D. L. Lack) (B.B., Vol 22, p.146).]

422. **Bar-tailed Godwit,** *Limosa lapponica lapponica.* (Linn.)

One record.

9. Chingford, one, 5.10.07, shot by, and in collection of, W. Hartwell.

423. **Black-tailed Godwit,** *Limosa l. limosa.* (Linn.)

Two records.

3. Staines Reservoirs, 14.8.27 (D. Gunn) ("Field" of 20.10.27, p.634), 8. Angel Road Sewage Farm, Edmonton, one, 1911, shot by, and in collection of, W. Joyce.

424. **Common Curlew,** *Numenius a. arquata.* (Linn.)

Autumn pasage migrant and winter visitor.

3, 4, 6, 7, 8, 9, 10, 12.

425. **Whimbrel,** *Numenius p. phæopus.* (Linn.)

Five records.

3. Staines Reservoirs, 6. Kensington (L.N., 1926, p.9), 8. Walthamstow Reservoirs (L.N., 1924, p.39).

429. **Common Snipe,** *Capella g. gallinago.* (Linn.)

Winter resident, some pairs remaining to breed.

All divisions except 1, 16, 17, 18, 20, 21, 22, 23.

Nested 4. Harrow, 9. Theydon Bois, 12. Itchingwood Common.

431. **Jack Snipe,** *Lymnocryptes minimus.* (Brünn.)

Winter resident, not common.

4, 6, 8, 9, 10, 11, 12.

432. **Woodcock,** *Scolopax r. rusticola.* Linn.

Winter resident, not common.

6, 7, 9, 10, 11, 12, 20.

433. **Black Tern,** *Chlidonias n. niger.* (Linn.)

Double passage-migrant.

3. Littleton and Staines Reservoirs, 14. Barn Elms Reservoirs.

438. **Sandwich Tern,** *Sterna sandvicensis sandvicensis.* Lath.

One record.

14. Barn Elms Reservoirs, two, 28.8.26 (A. Holte Macpherson) (L.N., 1926, p.53).

440. **Common Tern,** *Sterna h. hirundo.* LINN.

Double passage-migrant, has occurred in winter.

3. Staines and Littleton Reservoirs, 8. Walthamstow Reservoirs,nine,9.3.24 (Miss A. Hibbert Ware) ("Essex Naturalist," Vol 21, p.132),14. Barn Elms Reservoirs, 16.Tooting Bec Common, two, 16.12.25, and West Norwood, twelve, 17.12.25 (E. C. Stuart-Baker) (B.B., Vol 19, p.256).

441. **Arctic Tern,** *Sterna macrura.* NAUMANN.

One record.

14. Barn Elms Reservoirs, two, 6.9.26 and 13.9.26 (L. Parmenter), one, 14.9.26 (J. P. Hardiman and D. Gunn) (L.N., 1926, p.53).

442. **Little Tern,** *Sterna a. albifrons.* PALL.

Three records.

3. Staines Reservoirs, four, 22.9.25, 13. Molesey Reservoirs, one, 19.9.27, 14. Barn Elms Reservoirs, one, 6.8.26.

447. **Little Gull,** *Larus minutus.* PALL.

One record.

3. Staines Reservoirs, one immature, 6.10.28 (A. Holte Macpherson) (B.B., Vol 22, p.146).

448. **Black-headed Gull,** *Larus r. ridibundus.* LINN.

Winter resident, abundant, a few remain throughout the summer.

All divisions except 18, 22, 23, 24.

This species first appeared about 1895 and has since greatly increased as a winter resident. The large flocks are very prominent at sunrise and sunset as they move from their roosts chiefly at the West London Reservoirs, notably Staines, Littleton, Molesey and Barn Elms, to their feeding places and back.

451. **Common Gull,** *Larus c. canus.* LINN.

Winter resident, seen from July to April.

3, 4, 5, 6, 8, 9, 13, 14, 16, 17.

452. **Herring-Gull,** *Larus a. argentatus.* PONT.

Winter resident, varies greatly in numbers.

3, 4, 6, 8, 9, 13, 14, 16, 21.

455. **British Lesser Black-backed Gull,** *Larus fuscus affinis.* REINH.

Double passage-migrant, more numerous in autumn, July to October. Although this British sub-species has been definitely identified during the spring and autumn movements, it is still uncertain whether the winter records (Dec., Jan. and Feb.) refer to the British sub-species or the Scandinavian, *Larus fuscus fuscus.* LINN.

3. Staines Reservoirs, 6. Hyde Park, 8. Walthamstow Reservoirs ("Essex Naturalist," Vol 20, p.47), 14. Barn Elms and Lonsdale Road Reservoirs, 100, 5.9.27, 16. the Thames between the bridges, 21. the Thames between Greenwich and Barking Creek, several, 16.1.21.

456. **Great Black-backed Gull,** *Larus marinus.* LINN.

Irregular winter visitor.

6. Over the Thames at Westminster Bridge (B.B., Vol 18, p.30), 12. Ilford, 13. Molesey Reservoirs, 14. Barn Elms Reservoirs.

457. **Glaucous Gull,** *Larus hyperboreus.* GUNN.

One record.

6. St. James's Park, one, 20.3.15 (C. Borrer) (B.B., Vol 8, p.269).

459. **Kittiwake Gull,** *Rissa t. tridactyla.* (LINN.)

One record.

8. Enfield, one found dead, before 1912, actual date unknown (R. B. Lodge).

463. **Arctic Skua,** *Stercorarius parasiticus.* (LINN.)

One record.

6. Hyde Park, one flew over, 16.5.16 (E. D. Cumming) (B.B., Vol 10, p.70, and "The Field" of 27.5.16).

467 or 8. **Guillemot,** *Uria aalge.* (PONT.)

One record.

6: Winchmore Hill, one exhausted bird captured, 22.11.11 (O. G. Pike) (B.B., Vol 5, p.230).

471. **Little Auk**, *Alle alle.* (LINN.)

Two occurrences.

3. Staines Reservoirs, one, 28.11.28 to 6.12.28 (D. Gunn) (B.B., Vol 22, p.193), skin in possession of A. Holte Macpherson. 6. Finsbury Park, one captured, beginning of Feb., 1918 (R. Main) (B.B., Vol 6, p.164).

472. **Southern Puffin,** *Fratercula arctica grabæ.* (BREHM).

Irregular visitor.

6. Winchmore Hill, one, 17.1.94 (P. J. Hanson and O. G. Pike), Hampstead, one captured, 16.11.26 (L.N., 1926, p.55), St. James's Park, one, 17.10.27 to 21.10.27 (A. Holte Macpherson) (L.N., 1927, p.31), skin now at British Museum (Natural History), South Kensington, 15. Cobham, one captured, 28.10.23 (L. G. Payne) (L.N., 1923, p.19).

477. **Land-Rail,** *Crex crex.* (LINN.)

Irregular summer visitor.
3, 4, 6, 7, 8, 9, 10, 18.
Nested 6, 7 and 8 in the Winchmore Hill district before 1908.

478. **Spotted Crake,** *Porzana porzana.* (LINN.)

Two records.

8. Edmonton, one, 19.10.07, shot by, and in collection of, W. Hartwell, 9. Chingford, one, 26.9.14, shot by, and in collection of, W. Hartwell.

482. **Water Rail,** *Rallus a. aquaticus.* LINN.

Irregular visitor.

6. Winchmore Hill, Holborn (L.N., 1924, p.39), 7. near Enfield, 8. Edmonton, Enfield, Walthamstow Reservoirs, 9. Chingford, Buckhurst Hill, Theydon Garnon.

483. **Moor-hen,** *Gallinula c. chloropus.* (LINN.)

Resident, common.
All divisions except 21, 22, 23, 24.
Nested, all divisions except 5, 10, 13, 19, 20, 21, 22, 23, 24.

484. **Coot,** *Fulica a. atra.* LINN.

Resident, most numerous in winter.
All divisions except 16, 18, 21, 22, 23, 24.
Nested 3, 4, 6, 7, 8, 9, 11, 14, 15, 19.

490. **Pheasant,** *Phasianus colchicus.* LINN.

Resident.
All divisions except 16, 18, 21, 22.
Nested 9, 11, 20, 23.

491. **Common Partridge,** *Perdix p. perdix.* (LINN.)

Resident.
All divisions except 16, 21, 22, 23, 24.
Nested 2, 6, 7, 8, 9, 10, 11, 12.

492. **Quail,** *Coturnix c. coturnix.* (LINN.)

One record.

8. Ponders End Sewage Farm, one shot, 19.11.23 (P. J. Hanson), skin in the Society's collection.

493. **Red-legged Partridge,** *Alectoris r. rufa.* (LINN.)

Probable resident, but only recorded in March, May, June and July.

3, 6, 7, 9, 10, 11, 12, 24.
Nested 6, 7, 9, 10, 11, 24.

The Smooth Snake

By L. B. HALL, F.L.S.

DURING the last four years I have found numerous specimens of the rare British Smooth Snake, *Coronella austriaca,* on the Dorset Heaths, some of which I have kept in a large glass case in an unheated greenhouse.

On September 2nd, 1928, a female measuring twenty inches in length gave birth to six young, each six inches long.

The upper side of the body in the young snakes was dark greyish brown, with a double row of darker brown spots, as in the mature specimens. The size and shape of the spots varied in each, and in one they were mostly confluent, forming a series of short transverse bars down the back. The top of the head in all the six was bluish black. The under side of the body was reddish brown.

On September 14th all the six cast their skins, after which the back was a clear pale grey, with the brown spots remaining as before. The upper side of the head remained bluish black, with a beautiful tinge of blue when viewed in full sunlight. The under side was reddish brown as at birth.

On September 28th the young snakes took their first meal, which consisted of young common lizards, 2½ inches long. These appeared decidedly too large for the snakes, but they were swallowed whole. They were offered a variety of creatures which occur on their native heaths, but took no notice of any but the lizards. The usual food of the mature *Coronellas* is the Sand Lizard.

It is interesting to note that the method of feeding exactly resembled that of the parent snakes. With a sudden lunge the lizard was seized by the nearest portion of its anatomy, and was encircled by the snake's body, which held it in a tight grip. Then the jaws were gradually moved until the head of the lizard was secured, and it was swallowed whole.

I have been making notes of the habits of these snakes for the last few years and hope to give a more complete account later.

The curator of the reptile house of the Zoological Society's Gardens tells me that there is no known record of this species having been bred in captivity.

A Cut-Leaved Hornbeam in Surrey

Carpinus betulus (Linn.), *var. incisa* (Aiton).

By H. J. BURKILL.

A SPECIMEN of Hornbeam with leaves corresponding to the above variety as described by Aiton in his "Hortus Kewensis" iii., 263, in 1789, was found in the autumn near Leatherhead. Other names for this variety are *asplenifolia* (Hort.) and *heterophylia* (Kirchner). The tree is about fifty feet in height, and apparently quite healthy. It is growing a few yards from a hedge in a field, and was probably planted there several years ago, as there is a belt of trees on the other side of the hedge, and some big beech trees in a line with the Hornbeam. The belt of trees just there contains some specimens of the Norway Maple, a tree which has been somewhat extensively cultivated in the neighbourhood.

Four good sized branches originate from the trunk of the Hornbeam and spread out to form the lower mass of foliage, which is about five to eight feet from the ground. It is on these branches that the cut leaves are to be seen. The terminal shoots for four to eight feet are the most affected, some of them having no leaves that are not cut, while others have both the normal shaped and the cut leaved forms. The branches above these seem to bear only normal leaves. There are many small twigs springing from the trunk, and some of these have the abnormal leaves, sometimes entirely, and sometimes mixed with the normal form. The tree bears several of the growths known as "Witches' Brooms."

No other trees showing a similar abnormality have been noticed in the neighbourhood.

Most of our common trees and shrubs have varietal forms that differ from the normal either in habit or growth or in the colour and form of their leafage. These variations are termed "sports" and as such plants usually retain their abnormality when propagated vegetatively, they are sought for by horticulturalists for decorative purposes.

British Butterflies in 1928

By H. J. BURKILL.

FROM the reports sent in by members recording their observations during the past year, we think there can be no doubt that the season was much more favourable than has been the case for several summers. *Colias croceus* was present in sufficient numbers to make 1928 rank as a "Clouded Yellow year." The sight of many of these insects together is bound to make a strong impression on the observer, an impression which will outlast that created by a more sober coloured species which, however, may be present in far greater abundance. While, therefore, *C. croceus* stands out so prominently, it should probably be relegated to second place, and the chief honours be awarded to *Pyrameis cardui,* which was to be seen from June to September over a much larger area and in much greater numbers. Miss Longfield recorded one found on 15th May in the south-west of Ireland, where, however, the season was about two weeks later than in England owing to cold and wet weather. Rain in the north of England was detrimental to collecting also, and the notes supplied by Mr. Routledge bring out prominently the contrast between Cumberland and the Home Counties.

Among the Whites *Pieris brassicae* was common, and was observed ovipositing up to 6th Oct. *P. rapae* was very plentiful in Surrey, and the July brood was noticeable for the bright yellow tinge of the undersides. One was observed at Fetcham ovipositing on 30th September. *P. napi* was recorded by Miss Longfield to be common by 1st May. It was abundant in Surrey, and larvae were found up to 20th September.

Euchloe cardamines is mentioned by only a few observers. Miss Longfield saw several early in May. I saw a number on the North Downs in the early summer and found larvae near Bookham in July, but Mr. Talbot writing from Witley says, "not common". Of *Leptosia sinapis* he says, "was present, but scarce".

Colias hyale does not seem to have accompanied *C. croceus* in any numbers, as Mr. Mounsey, who was on the Sussex coast, has only a record of one taken by a collector there. Dr. Cockayne mentions two from the Isle of Wight, and Mr. Heath says he saw a few worn ones near Lulworth on 3rd September.

C. croceus. Mr. Mera records "about a score round Loughton from 30th Aug. to 26th Sept." Mr. Braithwaite reports great numbers in the West of England, especially in Dorset. Seen also in various places in Devon and Somerset. Dr. Cockayne records specimens seen in Hants, Sussex, Kent, and Surrey. Mr. Talbot says "common at Witley." Mr. Mounsey reports, "very abundant August and September and first week in October". Mr. C. H.

Williams says "common at Salcombe, N. Devon." Also seen at Royston, Box Hill and Chipstead, Surrey. Mr. Heath, "one or two in the spring above Horsley. Fairly common near Lulworth Cove, 3rd September". Mr. R. Palmer records a number observed in Herts during June, and quotes Dr. A. H. Foster of Hitchin as to the extreme abundance of the species in Cornwall during August. Mr. R. W. Robbins saw one on Limpsfield Common, Surrey, 16th June. A few at Holbrook, Suffolk, 20th August, fairly common near Totnes, and also seen on Dartmoor. Later on at Warlingham, Surrey, but not noted in Berks or Wilts during the third week in August. All that he could examine were males, not a single female being observed. Miss Gibson records it as abundant on the South Coast, and also seen at Caversham and Sandhurst. Mr. Pratt reported one from Streatham in June. Mr. Aris, one near Stowmarket. Mr. Tremayne saw one in Kirkcudbrightshire at the end of August, and on 11th September one at an elevation of 2000 feet near the summit of Cairnmore, in that county. I saw specimens at Fetcham, Leatherhead, from 4th August up to 30th September, when two or three were seen in spite of a cold N.E. wind. One of them was watched for some time searching the flowers of *Cheironthus allioni* for honey. It was a much rubbed, but not chipped, male. Others were seen in West Sussex towards the end of August, and on the Surrey Hills in September. The proportion of males to females of those examined was in a ratio of three to one. Mr. Collenette reported the species from near Brighton in September. Mr. Gaze, two at Highams Park, Essex, and two at Brightlingsea, Essex, in August. Mr. Adkin says he saw them occasionally at the end of June, but from the end of August they were quite common. His last one was seen 15th October. These were near Eastbourne. Mr. E. H. Wattson saw one in May, and when he was cycling in August and September, met with them in Herts, Middlesex, Bucks, Hants, Surrey, Sussex and Kent. Mr. Alexander records them as being extraordinarily abundant on the chalk hills in Kent, Surrey and Sussex in August and September. Also seen near Wembley. Mr. H. T. Payne found them in Stoke Newington, and near the River Lea. Mr. Mellows says they were abundant in East Herts, a few on the Norfolk Broads, and also in Northants, but apparently rare there.

Miss Longfield left Ireland without seeing any, so if the spring immigration had reached Cork it had not been on a large scale. Mr. H. B. Routledge reports none seen in Cumberland by him. His last specimen was in 1908. This is interesting in view of Mr. Tremayne's specimens seen a few miles further north in Kirkcudbrightshire.

The variety *helice* seems to have been present in considerable numbers. Mr. Mounsey records 65 taken by one collector in one place in September. He, himself, bred from a *helice* parent, and obtained 55½ per cent. *croceus* males, 18½ per cent. *croceus* females, and 26 per cent. *helice*. Mr. Adkin says,, "not uncommon with *croceus*, near Eastbourne." Mr. Joicey took two at Hayling Island. Miss Gibson records it as being fairly common at Worthing and in South Devon. Dr. A. H. Foster reports that he took many in Cornwall. Others were recorded by Dr. Cockayne, Messrs. Mera, Williams, and Alexander.

L. sibylla is recorded from several localities, including some not a great distance from London. It seems to have extended its range in recent years.

P. c-album was taken by Mr. E. H. Wattson at Twickenham, Mr. Palmer heard of one in Herts, while Mr. Braithwaite saw several in Dorset. Another species whose range is apparently extending.

E. polychloros turned up in Mr. Payne's garden in Stamford Hill. Mr. Williams saw others in Surrey.

A. urticae. Generally abundant, in some places extremely so.

V. io. Only four members say this was common. Most observers seem to think the species was about in reduced numbers.

P. atalanta was reported as common by most, but Mr. Routledge only saw two in Cumberland. Miss Longfield noted one on 1st May, and several on 28th May in Co. Cork.

P. cardui. Mr. Mera, one of our most experienced collectors, says, "Undoubtedly a great *Cardui* year," and the records bear out his statement. The first migrant recorded was by Miss Longfield in South Ireland on May 15th. From then up to June 23rd odd specimens were seen in many districts, even in London (Hornsey, Aris). From the beginning of August to the end of September and into October (October 14th, Eastbourne, Adkin) it was abundant around the South and East Coasts and far inland. The following notes may be quoted :—

"In great profusion in September at West Bay, Bridport." Braithwaite.

"Common this year Witley." Talbot.

"Swarming on the South Downs, every thistle patch had its complement of larvae." Mounsey.

"Plenty at Highams Park, Essex, also Brightlingsea." Gaze.

"Numbers at Guildford, Suffolk Coast, Pewsey (Wilts.), and S. Devon." Robbins.

"Unusually abundant in Kent, Surrey and Sussex, and all round London." Alexander.

"Very abundant on Norfolk Cliffs. Common on *Buddleia* at Peterborough." Mellows.

"Frequent in Hants and Sussex." Burkill.

"Halling, Kent, fairly common." Cockayne.

It is perhaps accidental that we have few records from Kent, and none from North of Oxfordshire, Northampton and Norfolk.

Zephyrus quercus was reported as being very plentiful near Limpsfield. It was also recorded from the Godalming district.

Nemeobius lucina was taken by various members, but the date selected for the official outing for the ova proved to be a few days too early, as owing to the cold weather the imagines were only just beginning to emerge. Members who went some ten days later met with much better luck.

Not much information has been received regarding the Skippers, but Mr. Ray Palmer says *A. lineola* was abundant in the Fens. Mr. Mellows also states that this species was exceedingly common in the Chelmsford district and Mr. Gaze reports it at Chingford, Essex. Of *C. paniseus* Mr. Mellows states, "It is quite scarce in localities where I found it abundant half a dozen years ago."

Macroglossa stellatarum has been in evidence, and there was apparently a considerable immigration of this species.

Mr. Talbot states that among the Sphingidae *C. elpenor* is becoming more common. Though there has always been an abundant supply of its food plants, the rapid spread of the Rose Bay Willow Herb in recent years may have given the insect a greater chance of sustenance, and it is only natural that it should be increasing in numbers.

Heliothis peltigera. Mr. Mounsey writes "There must have been a large immigration of this rare insect. The larvae were swarming on the Sticky Ragwort (*Senecio viscosus*) from Dungeness to Brighton, wherever it was growing on the shingle, and no doubt on its regular food, Rest Harrow. There were several broods and it spread inland, one to my knowledge being taken flying at Chipstead in Surrey. It was fairly common flying in the lucerne fields where *C. croceus* was so plentiful."

Mr. Pratt confirms the abundance of this species on the Sussex Coast.

PAPERS READ TO THE SOCIETY

Jan. 17	The Oxford Bird Census—A Scheme of Corporate Observation	E. M. Nicholson
Feb. 7	Annual Spring Exhibition	
	(1) "By Rail Road and River through the Heart of South America"	Miss C. E. Longfield, F.R.G.S., F.E.S., F.Z.S.
	(2) "My Week-end in the Home of Tutankhamen."	Rev. H. J. Gamble, M.A.
Feb. 21	"Our Common Lands; The Story of their Preservation."	Laurence J. Chubb
Mar. 20	"Sand Dunes"	Mrs. H. D. Kay, B.Sc.
Apr. 3	"Angel Choir, Lincoln"	G. J. B. Fox
Apr. 17	Bacot Memorial Meeting	
	"Mothing in the Tropics"	C. L. Collenette, F.E.S.
May 1	"Mt Mlange in Nyasaland and its Insect Fauna"	S. A. Neave, M.A. D.Sc., F.Z.S., F.E.S.
May 15	"The Plant Population of Britain"	J. E. Salisbury, D.Sc., F.L.S.
June 5	"Photomicrography"	E. H. Ellis, F.R.M.S.
Oct. 2	"The Great Fire of London"	Bernard Drew
Nov. 6	"Studies in Bird Life"	A. J. Rooker Roberts, M.A.
Dec. 4	"The Thames as a Bird Migration Route"	W. E. Glegg, F.Z.S., M.B.O.U.
Dec. 18	"Churchwardens' Accounts, Laleham Church"	Rev. C. L. Dunkerley
	"The Vultures of the Plant World"	F. W. Rolfe
	"Nature Notes from Southern France"	Miss M. Main
	"Brown Owlets"	S. G Poock

AT SECTIONAL MEETINGS

Mar. 6	"Hibernation of Insects"	J. C. Robbins, F.E.S.
	"Beaks and Bills of British Birds"	R. W. Hale
	"Rye"	E. Yates
June 19	"Flowerless Flowering Plants"	R. W. Robbins
Sep. 18	"Saxon Work in our Churches"	J. E. S. Dallas
Nov. 20	"Notes on the Season" (Plant Galls)	M. Niblett

Editorial Notes

IN presenting the results of the past year's work, the Publications Committee wish to thank all those members who so generously helped them with articles and notes, and with contributions to the Publications Fund, and so made the issue of the volume possible.

The Year's Work

The trend has again been upwards, the numbers of the papers and the outings showing that there was an advance on the standard of the previous year.

We have to thank the following, who kindly came as visitors to give papers to the Society :—Messrs. E. M. Nicholson, L. W. Chubb, G. J. B. Fox, Dr. S. A. Neave, Dr. E. J. Salisbury, Messrs. E. H. Ellis, B. Drew, A. J. Rooker Roberts, and also the Kodak Co. and Mr. Taylor for a display of films taken with a Kodascope Camera.

Exhibitions

The space for the Spring Exhibition on 7th February was insufficient for all the exhibits to be displayed on the tables in the two rooms, while the larger lecture hall proved inadequate for the accommodation of all those who wished to hear Miss C. E. Longfield and Rev. H. J. Gamble.

The Autumn Exhibition showed a big advance on that of 1927, reflecting the more favourable weather conditions that had prevailed during the summer months.

Honour for a Member

Dr. Major Greenwood has been elected to the Royal Society in recognition of his work on public health.

Publications by Members

Among others we have been pleased to see "A List of the Birds of Inner London" by Mr. A. Holte Macpherson in a recent issue of "British Birds"; "The Great Winding Road" by Mr. O. G. Pike; "Mishi : the Man-Eater" by Mr. E. C. Stuart Baker; and "The Birds of Essex" by William E. Glegg, F.Z.S., M.B.O.U., and "The Call of the Birds" by C. S. Bayne.

Bird Studies

Mr. Roland Green in December exhibited between forty and fifty drawings at the Ackermann Galleries, New Bond Street, which included some striking specimens of birds in flight, those of swans being perhaps the ones that appealed to us most.

Library

The Librarians have again worked assiduously to complete the new catalogue of the Library. This has now been printed and is being issued with the present volume

LONDON NATURAL HISTORY SOCIETY

GENERAL ACCOUNT

	£	s.	d.	£	s.	d
Balance 21st Nov. 1927				43	3	2
Subscriptions and Entrance Fees				88	18	0
Donations				2	6	6
Interest on deposit	0	19	10			
Life Composition a/c	0	8	11	1	8	9
				£135	16	5

	£	s.	d.	£	s.	d.
Rent				26	5	0
Printing Syllabus				7	18	9
General Printing				3	7	7
Chingford Branch Expenses				4	0	10
Secretary's Postages & Stationery				5	4	9
Treasurer's Postages				1	6	6
Postages for London Naturalist				2	12	11
Exhibition postages				0	9	4
Binding and Periodicals				0	19	0
Insurance				0	17	0
Gratuities				0	15	0
Grant towards Bird Skin Cabinet				1	10	0
Grants to Sections Ornithological 1928	1	1	6			
Ramblers 1927 & 1928	2	0	0	3	1	6
Subscriptions—						
Commons and Footpaths Preservation Society 1927 & 1928	1	0	0			
South Eastern Union of Scientific Societies	0	7	6	1	7	6
Adjustment on investment in war stock				1	10	8
Cost of Library Catalogue				14	6	0
Balance 12th Nov. 1928 at Bank				60	4	1
				£135	16	5

LONDON NATURALIST ACCOUNT

	£ s. d.		£ s. d.	£ s, d.
Donations	46 12 6	Balance 21st Nov. 1927		5 18 9
Advertisements	5 7 6	Printing London Naturalist	45 18 0	
Sales of London Naturalist ...	1 13 11	Blocks	1 14 7	47 12 7
Special Donations (Blocks & Printing)	3 1 7	Balance 12th Nov. 1928 at Bank ...		4 2 8
Received for Reprints	0 18 6			
	£57 14 0			£57 14 0

LIFE COMPOSITION ACCOUNT

	£ s. d.		£ s. d,	£ s. d.
Balance 21st Nov. 1927	55 0 0	Interest Transferred to General a/c ...		0 8 11
Bank Interest	0 8 11	Balance 12th Nov. 1928 at Bank	10 0 0	
Life Membership Composition ...	5 0 0	£50 5% War Stock 1929-47	50 0 0	60 0 0
	£60 8 11			£60 8 11

Audited and found correct, 28th December 1928

L. EYNON,
C. L. COLLENETTE, *Auditors.*

F. G. DELL,
Treasurer.

REPORTS FOR THE YEAR

The Council

THE accounts show that the General Fund balance rose by £17 0s. 11d., most of the increase accruing from subscriptions and entrance fees, which rose from £77 1s. 6d. to £88 18s. Life composition fees rose by £5, making the total of such fees £60. The deficit of £5 18s. 9d. in the "London Naturalist" fund was converted into a credit balance of £4 2s. 6d. The total of the credit balances rose by £32 6s. 9d. Of the life composition fees, all of which have been invested, the bulk is now represented by £50 Stock of the 5 per cent. War Loan. The improvement in the "London Naturalist" fund was due to a change in the agency of collecting subscriptions, this work being taken over by the Publications Committee. It is a matter of congratulation that a deficit of many years' standing should thus have been turned into a surplus.

New members numbered 36. This was less than the exceptionally large increase of 1927, but, as the losses from all causes numbered 14, there remains an increase of 22 members on the year. The number of Associates showed little change.

Mr. J. Ross, after many years of unremitting service to the Society, accepted the appointment of Honorary Vice-President.

A noteworthy feature was the commencement of publication in the "London Naturalist" of systematic records for the Society's area. A new and revised edition of the library catalogue was printed at the close of the year.

Whilst all sections increased their membership and expanded their activities, the Council desire to point out that the attendances at the Winchester House lectures, although improving, are not yet keeping pace with the growth in the Society's membership, and they invite the co-operation of the sections, with a view to increasing the attendances at the indoor meetings.

The Council desire to express their warm appreciation of the action of a lady member—who desires to remain anonymous—in kindly promising to relieve the General Secretary of the bulk of the routine clerical work.

J. P. HARDIMAN,
General Secretary.

It is with great regret that the Council announces the resignation of Mr. J. P. Hardiman from the position of General Secretary, which he has held for a period of three years. During Mr. Hardiman's association with this important office a remarkable measure of success has been achieved in almost all directions.

The keenness and enthusiasm which have been displayed by Mr. Hardiman while pursuing his duties, are closely related to the degree of success which has been witnessed, and the Council on behalf of the members assures Mr. Hardiman of their appreciation and gratitude for the valuable services which have been rendered.

William. E. Glegg,
President.

Archæology

TEN new members have joined the section during the year, and the number of members is now about 55.

The section has made 12 excursions, on which nine mediaeval churches, two manor houses, Lamb's Cottage at Edmonton, Brentford Museum, and the Collection of Early Christian Art in the British Museum, have been visited. These excursions, with one exception, have been very well attended, from 15 to 20 being the usual number present. We have specially to thank the Rev. C. L. Dunkerley, Miss Baily, and Miss Burkill for hospitality given to the section on our visits to Laleham, Binfield, and Fetcham respectively.

Records were made of Laleham, Godalming, and West Horsley Churches.

Two of the sectional meetings were joint meetings with the Ramblers, and very interesting papers, with exceptionally good slides, were given by Mr. E. Yates, on "Rye and Winchelsea," and Mr. J. E. S. Dallas, on "Saxon Work in our Churches." Both these meetings were well attended.

Mr. H. S. Stowell, owing to pressure of work, resigned the Recordership, and the section has been fortunate enough to get our new member, Mr. G. J. B. Fox, to undertake these duties. At the committee meeting of the section, held on the 24th October, a hearty vote of thanks was accorded to Mr. Stowell for the very great services he had rendered to the section during his Recordership.

Botany

THERE has been a further increase in the number of members on the books, 13 new members being enrolled as against three losses, the total now being 71 in comparison with 61 last year.

The section has held two meetings at Winchester House in addition to the annual general meeting. At a well attended meeting of the Society the section provided an interesting lecture, illustrated with lantern slides, entitled "Sand Dunes," by Mrs. H. D. Kay, B.Sc. The section also provided a lecturette by Mr. F. W. Rolfe, entitled "Vultures of the Plant World," at the general meeting held on December 18th.

A successful attempt was made at a sectional meeting to resume the discussions on the families of plants. The subject chosen was "Ferns," and the discussion, which was opened by Mr. R. W. Robbins, proved of great interest. Later in the season an excursion was made to Surrey, when members saw some of the British ferns *in situ.*

During the year eleven outdoor excursions were held. A week-end was contemplated, but had, unfortunately, to be postponed, owing to the difficulty of obtaining accommodation. Five of the excursions were arranged with the intention of seeing rare or unusual plants *in situ.* In three cases only was this object achieved, one of the reasons of the failure being the cancelled week-end referred to above. A particularly interesting excursion was held in April under the leadership of Mr. John Fraser, F.L.S., when members visited Epsom Common to study some of the British willows. Six species were definitely identified, and the leader's remarks proved absorbing to all present. By kind permission of the Hon. Vicary Gibbs, members were allowed in October to visit the magnificent collection of trees and shrubs in Aldenham House Gardens, to see the autumn colours. The remainder of the excursions were of a more general nature, although in all cases features of special botanical interest were noted. The attendance at the excursions has shown a marked upward tendency, the average attendance during the year being 11.75, as compared with 8.4 in 1927.

During the past year there have been seven additions to the number of records in the Society's Northern District, and four in the Southern. The most noteworthy are as follows :—

Northern District :—*Claytonia perfoliata* Donn., *Spiraea filipendula* Linn., *Lathraea Squamaria* Linn., *Aristolochia Clematitis* Linn., *Tulipa sylvestria* Linn.

Southern District :—*Campanula rapunculoides* Linn., *Aristolochia rotunda* Linn., *Salix aurita* Linn., *S.* × *cinerea* Linn.

The publication of the section's records was commenced in the 1927 number of the London Naturalist, in the form of a supplement, the intention being to continue on similar lines until they are all published. It is hoped that members will consult these records with a view to filling up the gaps, more especially with regard to the common species.

Herman Spooner.

Entomology

ONE sectional paper has been read, viz., on the 6th March, when Mr. J. C. Robbins dealt with "Hibernation of Insects."

Six outings have been successfully carried through, the places visited being :—Horsley, on 26th May; Riddlesdown, on 30th June; White Hill, Mickleham, on 21st July; Eynsford, on 11th August; Guildford, on 12th August; Epping Forest, on 29th September.

The attendance was highest for the Guildford meeting, when sixteen members and visitors took part in a successful hunt for the larvae of *Stigmonota pallifrontana.* At the Eynsford outing nineteen species of butterflies were noted, viz. :—*P. brassicae, P. rapae, P. napi, G. rhamni, V. io, P. Atalanta, P. cardui, A. urticae, H. semele, P. megaera, E. jurtina, A. hyperanthus, C. phloeas, C. pamphilus, P. icarus, A. coridon, A. bellargus, H. malvae,* and *A. comma,* all within a few miles' walk. On the White Hill outing eleven *Pieris rapae* and *P. napi* were observed in a compact group on moist mud on the bank of a pond by a farm at Headley. At the larva hunt in Epping Forest several species were found, among them being :—*Drepana lacertinaria* and *D. falcataria, Notodonta camelina,* and *N. dromedarius, Dasychira pudibunda, Boarmia strataria, Hadena pisi.* The only imagines seen during the day were some *Tapinostola fulva* found among rushes. The seedling *Betulas* were found to be extensively attacked by the larvae of the Sawfly, *Croesus septrionalis,* L.

A new record of Odonata for Ireland has been established by the capture of four males of *Sympetrum sanguineum,* Müll., in August, 1928, by Miss C. Longfield, F.E.S., at a pond in the deer park at Castle Mary, Cloyne, Co. Cork, Irish Free State.

Sphinx ligustri. A nearly fully grown larva was found on Fetcham Downs in August feeding on *Viburnum lantana,* to which it had apparently strayed from some *Ligustrum vulgare* a few yards away. Its colour was a sickly yellowish green, and there was only the faintest sign of the diagonal white stripes and none of the purple. On being given privet to eat it quickly acquired the normal colours without a change of skin. It pupated in due course and in January was reported to be a healthy pupa.

Several members have sent in notes of the occurrence of butterflies during the past season, and these have been compiled into an article which appears in this volume. Other notes showing further activities are also included in the issue.

H. J. BURKILL, *Hon. Sec.*

Erratum. "London Naturalist," 1926, p.49; lines 3-7, "A single *D. janitrix* . . . June 16th," should be omitted.

Ornithology

THE section has received with great regret the resignation of Mr. A. Brown, who has been our Recorder since 1917. His work in this office has been indefatigable and we owe him a lasting debt of gratitude. He hands over the records in perfectly complete form to his successor, to whom his work will be a model of thoroughness.

Two ornithological papers provided by the section were read at general meetings of the Society :—Jan. 17th, "The Oxford Bird Census; a Scheme of Corporate Observation," by Mr. E. M. Nicholson; Nov. 6th, "Studies in Bird Life" (with lantern illustrations), by Mr. A. J. Rooker Roberts, M.A.

Two sectional meetings were held at which the following papers were read :—March 6th, "Beaks and Bills of British Birds," by Mr. R. W. Hale; September 18th, "Glimpses of Bird Life," by Mr. R. W. Pethen, and "Birds of Wanstead Park," by Mr. H. A. Littlejohn.

At the annual general meeting of the Society on December 4th, Mr. W. E. Glegg, F.Z.S., M.B.O.U., gave for his Presidential Address "The Thames as a Migration Route," and on December 18th Mr. S. G. Poock delivered a lantern lecturette entitled "Brown Owlets."

The ornithological department of the Horniman Museum was visited on November 17th under the direction of Mr. Frank Finn, F.Z.S.

The ever popular field meetings were attended by 69 members and 24 visitors with an average attendance of 15.75. At the 21 field meetings held, 113 different species were identified with an average of 43 at each meeting. Fifteen of the Society's sub-districts were visited during the 14 field meetings held within the Society's area.

The following localities were visited :—Weybridge, Essex Marshes, Walthamstow Reservoirs, Kent Woodlands, Hertfordshire Woodlands, Boxhill, Wanstead Park (including the heronry, through the courtesy of Mr. F. F. McKenzie), Bookham, Tring (2 visits), Epping Forest, Richmond Park (2 visits,) Limpsfield, Eynsford, Reading, Kent Marshes, Ruislip, Hatfield Forest, Amersham and Navestock.

Ringing

A remarkable increase was made this year in the Society's returns under the "British Birds" marking scheme. Schedules relating to 1188 birds of 60 different species were sent in, as compared with 490 birds of 40 different species in 1927. Eighteen ringers took part in the work, and particular mention should be made of Mr. P. A. D. Hollom, who ringed 431 birds. We were considerably helped by our correspondents, the Misses S. A. E. and S. E. G. Harker, Miss P. Meade, and Miss F. Collins, and Messrs. C. S. Clarke and D. D. Richardson.

The following two birds have been reported as recovered :—

(i) A Blackbird ringed at Bishops Stortford, Herts, by Mr. C. S. Clarke, as a nestling, May 22nd, 1927, and recovered where ringed on October 21st, 1927.

(ii) A Wren ringed at Bishops Stortford, Herts, by Mr. C. S. Clarke, as a nestling, on 12th June, 1927, and recovered where ringed on Janury 28th, 1928.

Reading Circles

The reading circles have been an increasingly popular feature of the section's activities. In January, 1928, two copies of "British Birds"and one copy of the "Revue Française d'Ornithologie" were in circulation. During the year three more copies of "British Birds" were circulated and the number of readers increased to 38, whilst the "Revue Française d'Ornithologie" was shared by a circle of 10. Also, through the kindness of Miss M. G. L. Best, a copy of the "Scottish Naturalist" was circulated amongst 15 members.

Collections

An addition to the photographic collection was made in the form of a series of Australian bird post-cards issued by the Sydney Museum and presented by Mr. H. Wolstenholme.

Forty bird skins were added to the collection during the year. The skins included 31 different species and were chiefly obtained through the collections of Messrs. Cross and Glegg, which were kindly presented to the Society.

Twenty-three new members and two school associates joined the section making a total membership of 127 as at 31st December, 1928.

The thanks of the section are tendered to the correspondents who have kindly furnished notes and records during the year.

H. A. Littlejohn, *Secretary*.

NEW SPECIES

Seven species of birds new to the Society's district have been recorded during 1928, making the total number 192. These occurrences were :—

Garganey, *Anas querquedula* L., 31st March, a pair at Barn Elms Reservoirs (J. P. Hardiman and H. N. Southern).

Long-tailed Duck, *Clangula hyemalis* (L.). , 13th November to 15th December, one female or immature at Barn Elms Reservoirs (D. Gunn, A. Holte Macpherson and others). ("British Birds," Vol XXII, p. 191.)

Velvet Scoter, *Oidemia f. fusca* (L.), 3rd December, 1927, one immature at Barn Elms Reservoirs (D. Gunn per A.H.M.); 13th December, 1927, one immature at Staines Reservoirs, probably the same bird (J. W. Castle per A. H. M.).

Great Northern Diver, *Colymbus immer* Brünn 6th November, 1927, one at Staines Reservoirs (D. Gunn, J. W. Castle, F. R. Finch per A. H. M.).

Black-throated Diver, *Colymbus a. arcticus* L. 6th December, 1927 (D. Gunn) and 13th December, 1927 (J. W. Castle per A. H. M.), one at Staines Reservoirs.

Sanderling, *Crocethia alba* (Pall.), 4th September, one at Staines Reservoirs (T. H. Harrisson), 12th September, one on the mud of the partially drained Brent Reservoir (L. Parmenter). ("British Birds," Vol XXII, p. 168.)

Little Gull, *Larus minutus* (Pall.),6th October, one immature at Staines Reservoirs (A. H. M.) ("British Birds," Vol XXII, p. 146.)

INTERESTING RECORDS

Records of the more uncommon species observed during the current year are as follows:—

Hooded Crow, *Corvus cornix cornix* L., 26th February, one, half mile east of Horton near Epsom (R. W. Hayman per W. E. Glegg).

Carrion Crow, *Corvus corone corone* L., 11th May, at dusk 76 were counted at Walthamstow Reservoirs (R. W. Pethen).

Hawfinch, *Coccothraustes c. coccothraustes* (L.), nest found but later robbed, Harrow (T. H. H.).

Siskin, *Carduelis spinus* (L.), 12th February (4), 19th February (10), Richmond Park (L. P. and A. H. M.).

Common Crossbill, *Loxia c. curvirostra* L., 26th February, pair near Wisley Common (W. C. Cocksedge).

Corn Bunting, *Emberiza c. calandra* L., nest at Harrow and near Northolt (T. H. H.).

Cirl Bunting, *Emberiza cirlus* L., July, nest of 4 eggs, robbed later, Harrow. Pair seen about but not on nest (T. H. H.).

[Fire-crested Wren, *Regulus i. ignicapillus* (Temm.), 10th and 11th March, one at Long Hills, Epping Forest (J. Ross).]

Grasshopper-Warbler, *Locustella n. nævia* (Bodd.), 28th April, one at Stanmore Common (R. W. Hale), 12th May, one at Bank's Common, near Bookham (C. S. Bayne).

Reed-Warbler, *Acrocephalus s. scirpaceus* (Herm.), 2nd May, one in the flower walk, Kensington Gardens (A. H. M.); 2nd June, one in song, Leg-of-Mutton Pond, Hampstead Heath; 14th August, one at gravel pit, Barn Elms Reservoirs (L. P.).

Ring Ousel, *Turdus torquatus torquatus* L., 25th September, one in garden of 12, Chesterford Gardens, N.W.3, stayed 2 or 3 hours despite attacks by three Blackbirds (H. F. Witherby per R. W. Hale).

[GREENLAND WHEATEAR, *Œnanthe œ. leucorrhoa* (Gm.), 24th April, one probably of this sub-species in Kensington Gardens (Miss M. B. H. Deane per A. H. M.).]

NIGHTINGALE, *Luscinia m. megarhyncha* Brehm, 19th May, one sang outside the Curator's LodgeRegent's Park (D. Seth Smith per A. H. M.). ("The Times" of 24th May, 1928.)

SWIFT, *Apus a. apus* (L.), 19th April, early date, 3 or 4 at Barn Elms Reservoirs (A. H. M.).

NIGHTJAR, *Caprimulgus e. europœus* L., 21st July, one male at Hampstead Heath (L.P.).

WRYNECK, *Jynx t. torquilla* L., 12th April, one at Fairmead, Epping Forest (P. D. Hayward per S. Austin); 15th April, two at Warren Plain, Epping Forest (S. Boardman).

PEREGRINE FALCON *Falco p. peregrinus* Tunst., 3rd March, one flew over St. George's Hospital towards Hyde Park (Hon. Guy Charteris and N. B. Kinnear per W. E. G.).

SHELD-DUCK, *Tadorna tadorna* (L.), 6th October to 11th November, two at Staines Reservoirs (A. H. M.).

GADWALL, *Anas strepara* L., 22nd April, pair at Staines Reservoirs (D. Gunn per A. H. M.).

PINTAIL, *Anas acuta acuta* L., 6th January (Miss H. Watkins) to 10th March (L. P.), one male, Penn Ponds, Richmond Park.

SHOVELER, *Spatula clypeata* (L.), 15th January, 3 males, 2 females, Penn Ponds, Richmond Park (R. W. Hayman per W. E. G.).

FERRUGINOUS DUCK, *Nyroca n. nyroca* (Güld.), 24th September a pair at Staines Reservoirs (T. H. H.). ("British Birds," Vol XXII, p. 144.)

TUFTED DUCK, *Nyroca fuligula* (L.)., Bred in Hyde Park, Kensington Gardens, Victoria Park and Barn Elms Reservoirs (A. H. M., L. P.).

SCAUP-DUCK, *Nyroca m. marila* (L.), 27th January, one male (J. P. H.); 29th December, one male (L. P.), at Barn Elms Reservoirs.

GOLDENEYE, *Bucephala c. clangula* (L.), 6th October, early date, two female or immature at Barn Elms Reservoirs (L. P.).

COMMON SCOTER, *Oidemia n. nigra* (L.), 13th April, a pair on Long Water, Kensington Gardens (L. P.). ("British Birds," Vol XXII, p. 24.)

GOOSANDER, *Mergus merganser merganser* L., January, February, and March at Penn Ponds, Richmond Park, largest number 38, 7 being adult drakes, on 6th February (R. W. Hayman per W. E. G.); January, two, St. James's Park,and one on Serpentine, Hyde Park (A. H. M.). ("British Birds," Vol XXI, p. 262).

SMEW, *Mergus albellus* L., at Barn Elms Reservoirs, largest number 30 (3 males),on 14th January (R.W. Hayman per W.E.G.);

Molesey Reservoirs, largest number 26 (3 males), on 31st December (T. H. H.); Ruislip Reservoir, one on 22nd January, and Serpentine, Hyde Park, one 7th February (L. P.). ("British Birds," Vol XXI, p. 262.) Staines Reservoirs, two on 29th December (A. H. M.); Walthamstow Reservoirs, largest number 17, on 26th February (E. Mann).

CORMORANT, *Phalacrocorax c. carbo* (L.), 9th and 12th February, one at Barn Elms Reservoirs (R. W. Hayman per W.E.G.); 9th and 27th February, one at Staines Reservoirs (J. P. H.); 17th March, one at Walthamstow Reservoirs (L. P.).

SLAVONIAN GREBE, *Podiceps auritus* (L.), 7th January, one at Barn Elms Reservoirs (Miss H. W.); 18th November to 1st December, one at Staines Reservoirs (A. H. M.).

RED-NECKED GREBE, *Podiceps g. griseigena* (Bodd.) 12th February, two at Walthamstow Reservoirs (A. Brown); 1st December, one at Staines Reservoirs (A. H. M.).

BLACK-NECKED GREBE, *Podiceps n. nigricollis* Brehm, 7th July, one in bedraggled breeding plumage, Elstree Reservoir; 9th August, one at Staines Reservoirs (T. H. H.).

RINGED PLOVER, *Charadrius h. hiaticula* L., 2nd August to 17th August, two to seven at Brent Reservoir (L. P. and Mrs. Boyd Watt); 6th October, one at Staines Reservoirs (A. H. M.).

GOLDEN PLOVER, *Charadrius apricarius* L., 24th March (70), 25th March (170), near Stanwell (R. W. Hayman per W. E. G.).

RUFF, *Philomachus pugnax* (L.), 8th August, one immature male or more probably female at Littleton Reservoir (W. E. G. and J. P. H.) ("British Birds," Vol XXII, p.146).

DUNLIN, *Calidris alpina* (L.), 2nd to 17th September, two to four (L. P. and Mrs. B. W.); 17th November, one, Brent Reservoir (T. H. H.).

CURLEW-SANDPIPER, *Calidris testacea* (Pall.), 12th to 17th September, two at Brent Reservoir (L. P. and Mrs. B. W.). ("British Birds," Vol XXII, p. 168.)

COMMON SANDPIPER, *Tringa hypoleucos* L., one remained during the winter 1927-1928, last seen on 17th March, at Walthamstow Reservoirs (R. W. P. and L. P.).

COMMON REDSHANK, *Tringa totanus totanus* (L.), 10th January, one at Barn Elms Reservoirs (Miss H. W.); at least 4 pairs stayed during summer, and one nest found, Harrow (T. H. H.).

GREENSHANK, *Tringa nebularia* (Gunn.), 2nd September, eleven at Brent Reservoir (L. P.). ("British Birds," Vol XXII, p. 168.)

GREY PHALAROPE, *Phalaropus fulicarius* (Linn.), 15th August, one at Staines Reservoirs (D. L. Lack). ("British Birds," Vol XXII, p.146.)

JACK SNIPE, *Lymnocryptes minimus* (Brünn), 12th December, one near Sudbury Court, Harrow (T. H. H.).

BLACK TERN, *Chlidonias n. niger* (L.), 3rd May, three at Staines Reservoirs (R. W. Hayman per W. E. G.), 21st August, eleven, all but four in full breeding plumage (A. H. M.); 28th

August, one immature, and 10th September, three immature flew off at a good height up river (L. P.), at Barn Elms Reservoirs.

COMMON TERN, *Sterna h. hirundo* L., 1st September one flew off up river at a good height at Barn Elms Reservoirs (A. H. M.).

BRITISH LESSER BLACK-BACKED GULL, *Larus fuscus affinis* Rheinh., July to October, seen on Thames at London Bridge, Kew, Barnes, and in Hyde Park (A. H. M. and L. P.).

GREAT BLACK-BACKED GULL, *Larus marinus* L., 29th December, one immature at Molesey (T. H. H.).

LITTLE AUK, *Alle alle* (L.), one, 28th November, till October 6th, when it died at Staines Reservoirs. Skin in possession of A. Holte Macpherson. (D. Gunn in "British Birds," Vol XXII,p.193.)

LAND-RAIL, *Crex crex* (L.), 19th September, a dead bird taken from the water at South Chingford. Skin in Society's collection (R. W. P.).

WATER-RAIL, *Rallus a. aquaticus* L., 17th March, one at Walthamstow Reservoirs (L. P.).

RED-LEGGED PARTRIDGE, *Alectoris r. rufa* (L.), 29th July, three adults and one adult with 14 young at Dunton Green (L.P.).

Records which are considered doubtful are placed in square brackets and are not added to the Society's list.

CORRECTIONS

Ornithological Report in LONDON NATURALIST, 1927 :—

P. 41, line 3 :POCHARD, *Nyroca f. ferina* (L.), should read, "January 2nd at Barn Elms Reservoirs (over 200), and June 25th (duck with 6 newly hatched ducklings), (A. H. M.)."

P. 41, line 16 : SMEW, *Mergellus albellus* (L.) should read, "January 1st-February 13th, Barn Elms (greatest number 15), and Staines Reservoirs (L. P.)."

P. 41, line 43 : omit LEACH'S PETREL, *Oceanadroma l. leucorrhoa,* as the locality is outside the Society's area.

"Migration of Gulls," by J. P. Hardiman :—p. 26, line 10 for (*Larus fuscus fuscus*) read (*Larus fuscus fuscus*), Linn., or (*Larus fuscus afflnis*), Rheinh.

NOTE

The Recorder would be glad to receive more notes from members. Actual localities and dates should be given, and where possible the status of the species in the particular locality.

Members are asked to record the first and last dates of all migrants in the various divisions of our area, to give particulars of daily, migrational and weather movements, and to pay special attention to fluctuations in the numbers of individuals and of nests of all breeding species.

Plant Galls

ONE sectional meeting has been held at which Mr. Niblett read a paper entitled, "Notes on the Season."

Five outings have been carried through, the places visited being:—Effingham and Bookham Commons, 19th May; Epping Forest, 2nd June; Kingswood, 16th June; Limpsfield Chart, 15th September; Dorking and Friday Street, 22nd September.

Mr. Niblett has done a large amount of experimental work in breeding out the gall flies and their parasites, as shown when some of his results were embodied in the paper recently given to the section.

A large number of observations and records have been made during the year, among them the following seem perhaps to be the most interesting.

Cynipidae.

Rhodites mayri, Schl., was found at Shoreham, Kent, on *Rosa canina,* L. This is believed to be the second record of this insect in Britain, the first one having been made by Prof. Heslop Harrison a few years ago in the north of England.

Aulax rogenhoferi, Wachtl., has been recorded from various places along the North Downs, while *Au. scabiosae,* Giraud., turned up at Fetcham.

Among the oak galls the abundance of *Dryophanta folii,* L., was one of the features of the year. Its alternate spring form, however, was reported only twice, a fact which is not altogether surprising since this species, *D. taschenbergi,* Schl., seems to prefer tree trunks in dense shade, whereas *folii* occurs out in the open, and being on leaves is much more noticeable. *D. longiventris,* Hartig, was general, but not in profusion like *folii. D. disticha,* Hartig, and *D. agama,* Hartig, were more often met with than *D. divisa,* Hartig. *Neuroterus vesicator,* Schl., was plentiful in the early summer, while *Andricus fecundator,* Hartig, and *A. glandulae,* Schnk., were abundant in the autumn.

Cecidomyidae

For Midge galls we have to record:—

Clematis vitalba, L., buds swollen and unopened. Causer not determined, but possibly a Cecidomyid. Near Petersfield, Hants.

Papaver nudicaule, L., seed pods swollen irregularly. *Perrisia papaveris,* Winn. In a garden at Fetcham. Mr. Niblett has since recorded the same species from Wallington.

Hippocrepis comosa, L. *Macrolabis hippocrepidis,* Kieff. Near Dorking. *Onobrychis viciaefolia,* Scop. *Perrisia onobrychidis,* Bremi., Bookham. *Sorbus aucuparia,* L., buds swollen and not opening. *Cecidomyid.* One tree near Leatherhead rather badly attacked.

Epilobium angustifolium, L. *Perrisia epilobii,* F. Low. This gall has been reported from several localities and seems to be increasing with the spread of the plant.

Pimpinella saxifraga, L. *Contarinia traili,* Kieff, Fetcham.

Angelica sylvestris, L. Flower buds aborted, unopened. *Cecidomyid,* West Sussex.

Peucedanum sativum, Benth. & Hook., fil. *Perrisia dittrichi,* Rubs., Hog's Back, Surrey (R. S. Bagnall).

P. sativum, Schizomyia pimpinellae, F. Low, Oxted.

P. sativum, Macrolabis corrugans, F. Low, Riddlesdown.

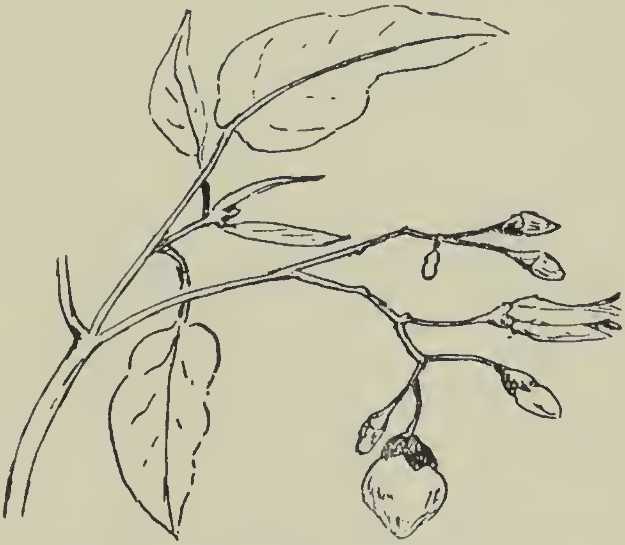
Daucus carota, L., *Trotteria umbelliferarum,* Kieff., Fetcham.

Centaurea scabiosa, L., *Phanacis centaureae,* Forster, Hog's Back, Surrey (R.S.B.).

Campanula rotundifolia, L., *Perrisia trachelii,* Wachtl., Plentiful in East Hampshire and North-West Sussex.

Ligustrum vulgare, L., buds unopened. *Asphondylia sp.,* Hog's Back (R.S.B.).

Solanum Dulcamara, L., flower buds much swollen, solid, fleshy. *Contarinia solani,* Rubs., first found near Guildford on the section's outing to the Hog's Back (R.S.B.). Then found in two places in West Sussex, and later in two places near Leatherhead.



Contarini solani—Fetcham, 7.9.28.
New to the British List.

Betula pubescens, Ehrh., *Contarinia betulicola,* Kieff., near Witley.

Psyllidae

Rhamnus frangula, L., *Trichopsylla walkeri,* Forster. This seems to be the first record in the Society's lists of this insect attacking the Alder buckthorn, though it is always plentiful in our district on the Common Buckthorn. The galls were found near Kingswood.

Urtica dioica, L., *Trioza urticae.,* L., very abundant in August, September and October. In other years it has sometimes not been reported at all.

Eriophyidae

Malva moschata, L., *Eriophyes gymnoproctus,* Nal., a large number of plants were found to be heavily galled by this mite. Eynsford.

Aesculus hippocastanum, L., *E. hippocastani,* Fockeu, Eynsford.

Vicia cracca, L., *Phyllocoptes retiolatus,* Nal., margins of leaflets rolled tightly upwards, Riddlesdown.

Rubus echinatus, Lindl., *Eriophyes gibbosus,* Nal., the galls of this mite were more in evidence this year than they have been for some seasons, and were noted on several species of *Rubus.* They do not seem to have been recorded on this host plant before. Limpsfield Chart.

Pimpinella saxifraga, L., *E. peucedani,* Can., Riddlesdown and Dorking.

Viburnum lantana, L., *E. viburni,* Nal., Riddlesdown. This gall has not been seen much this year. Usually it is noticeable along the range of the North Downs, but is not as frequent as the galls of *Oligotrophus solmsii,* Kieff.

Achilles Ptarmica, L., *Eriophyes sp.,* Linchmere, Sussex, can be added to the list of localities for this gall. It was plentiful there in August.

Jasione montana, L., galls apparently those of *E. enanthus,* Nal., were reported from Pembrokeshire (E. B. Bishop).

Fraximus excelsior, L., *Eriophyes sp.* (Houard, 4646). Treyford, Sussex.

Gentiana amarella, L., *E. Kerneri,* Nal., again recorded near Dorking.

Verbascum nigrum, L., flower spike much aborted. Buds densely massed together, and covered with white hairs. Probably *Eriophyes sp.,* but no mites detected on examination (A. W. Dennis).

Veronica chamaedrys, L., *E. anceps,* Nal., Riddlesdown.

Ulmus montana, With., *E. filiformis,* Nal., Ranmore, near Dorking.

U. minor, Mill., *Eriophyes sp.,* tufts of whitish hairs in the angles of the veins on the under surface of the leaves. Suffolk (R. W. Robbins).

Quercus ilex, L., *E. illicis,* Can., only a few of the galls to be found near Leatherhead in the spot where it has been known for some years. No fresh localities reported this year.

Q. coccinea, Wangerheim, *Eriophyes sp.* (Houard, 2006.) Sussex.

Anthoxanthum odoratum, L., head deformed, glumes split at the top and twisted. Nothing found on miscroscopical examination, but the appearance of the plant suggests *Eriophyes.* Liphook.

H. J. Burkill, *Hon. Sec.*

Ramblers

THE membership of the section now stands at 43 as against 35 a year ago.

Twelve rambles have been held during the year with an additional fixture consisting of a visit to the Zoological Gardens. Attendance has varied between 4 and 18, the verage being 9.

The excursions, which were usually favoured with fine weather, were greatly enjoyed by the participants, some of whom were visitors who thus had the activities of the Society brought to their notice in a pleasurable manner. The policy of giving the leader unfettered choice of venue and other arrangements has been attended with the happiest results, and members have for the most part willingly undertaken the duties of leader in turn.

The section is affiliated to the Federation of Rambling Clubs and is thus in a position to assist in any movements for the preservation of, and right of access to, the beauties of the countryside.

Lawrence J. Tremayne.

Chingford Branch

THE Chingford Branch has had a satisfactory year. The membership has been well maintained, the highest attendance, 33,and the lowest 21. The average was a trifle under that of 1927 when including visitors, but on the other hand the attendance of actual members was ten per cent. higher.

At the indoor meetings the following lectures were delivered : "The Discovery of Troy," by Rev. H. J. Gamble, M.A., "Nature in North Wales," by E. Samuelson ; "Migrating Fishes," and "More about Migrating Fishes," by P. W. Horn ; in the first he dealt with the life-history of the salmon, and in the second with that of the eel. "Nature in Southern England," by J. E. S. Dallas ; "Birds and Plants in North Italy," by Miss Hibbert Ware, F.L.S. ; "English Gothic Architecture," by Trevor I. S. Blake ; "By Rail, Road and River through the Heart of South America," by Miss C. E. Longfield, F.R.G.S., F.Z.S., F.E.S. ; "Some Lower

Forms of Plant Life," by J. Ross; "Rambles and Scrambles in the Alps," by Dr. Alford Rogers.

In addition there were two visits to the Zoo, one to Kew Gardens, also forest rambles, including one to Waltham Abbey.

The thanks of the Branch are again due to Messrs. Ross and Bernard Ward for acting as lanternists.

E. SAMUELSON, *Secretary.*

Breeding Gall Flies

By M. NIBLETT

Summary of a paper read to the Plant-Galls Section,
20th November, 1928

MIDGES bred out from galls included some of the following:—*Perrisia rosarum,* Hardy. From galls gathered at the end of August, 1927, flies emerged 5th to 17th May. *Perrisia urticae,* Perris, emerged 24th April to 27th May. *Oligotrophus capreae,* Winn, 3rd March to 4th June. *Perrisia veronicae,* Vallot, gathered 30th June, emerged 20th July. A succession of broods is here indicated as the galls occur over a long period. *Oligotrophus bursarius,* Bremi, emerged 17th May to 13th June. *Rhabdophaga salicis,* Schrank, did not yield well, but some flies emerged at the beginning of June. Attempts to breed out *Oligotrophus annulipes,* Hartig, *Contarinia tilliarum,* Kieff., *Putoniella marsupialis,* F. Low, and *Oligotrophus taxi,* Inch., failed.

Muscid results were:—*Urophora solstitialis,* L., emerged in numbers from heads of *Centaurea nigra,* L., together with the *Chalcid* parasite, *Eurytoma curta,* while *U. quadrifasciata,* Meigen, came out from heads collected in five different localities. *U. cardui,* L., gave unsatsifactory results. *Trypeta bardanae,* Schrank, was bred in quantity from seed heads of Burdock.

Among the *Cynipidae, Neuroterus lenticularis,* Oliv., came out well, but *N. laeviusculus,* Schenck., *N. numismatis,* Oliv., and *Andricus ostreus,* Gir., failed though kept under exactly the same conditions. *Andricus curvator,* Hartig, *A. inflator,* Hartig, *A. gemmatus,* Adler, *Neuroterus bacarum,* L., *N. vesicator,* Schl., and *N. albipes,* Schenck., all yielded well. *Dryophanta divisa,* Hartig, emerged 17th November, *Rhodites rosae,* L., *Rh. eglanteriae,* Hartig, and *Rh. rosarum,* Gir., were also successfully reared, but attempts to induce gall formation by the first named on garden rambler roses, were abortive.

List of Members

(Corrected up to 7th May, 1929).

It is particularly requested that Members will inform the Secretary as soon as possible of any change of address.

HONORARY PRESIDENT

The Right Hon. The Viscount Grey of Fallodon, K.G., P.C.

HONORARY VICE-PRESIDENTS

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1901 Grant, G. F. H., 3, Westbourne Street, Hyde Park, W.2. (Arch.)
1927 LeSouef, A. S., C.M.Z.S., R.A.O.U., Taronga Zoological Park Trust, Sydney, Australia.
1899 Massey, Herbert, M.B.O.U., F.E.S., Ivy Lea, Burnage, Didsbury, Manchester. (Lep. Orn., Ool.)
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MEMBERS.

1892 Adkin, R., F.E.S., "Hodeslea," Meads, Eastbourne. (Lep.)
1925 Aldred, Miss B. A., 16, Boscastle Road, Dartmouth Park, Kentish Town, N.W.5.
1927 Aldred, Miss K. V., 5, Ladbroke Court, Ladbroke Gardens, Notting Hill, W.11. (Arch., Orn.)
1922 Aldred, Miss M., Flat 5, 21 Ladbroke Gardens, Notting Hill W.11. (Orn.)
1928 Alexander, O. A., 23, New Cavendish Street, W.1. (Ent.)
1925 Archbould, R. S., Forest Way, Loughton, Essex. (Orn.)
1924 Aris, A., 44 Oldfield Road, Hampton, Middlesex.
1915 Aris, E. A., F.Z.S., 9, Oak Avenue, Priory Road, Hornsey, N.8. (Lep.)
1892 Austin, S., F.Z.S., 43 Darenth Road, Stamford Hill, N.16. (Orn., Arch.)
1929 *Bagnall, R. S., D.Sc., F.R.S.E., F.L.S., 9 Manor Place, Edinburgh. (Plant Galls, Ent., Bot.)
1927 Baily, Miss A. R., Cressex Lodge, Binfield, Berks. (Arch., Bot., Orn., Ent., Plant Galls, R.)
1927 Baird, The Hon. J. I., Flat 3, 40, Park Lane, W.1. (Orn.)
1924 *Baker, Edward C. S., J.P., O.B.E., F.Z.S., F.L.S., M.B.O.U., H.F.A.O.U., 6, Harold Road, Upper Norwood, S.E.19. (Orn.)
1927 Baldock, G. R., 467, Hertford Road, Enfield Highway, Middlesex. (Lep.)
1927 Barclay-Smith, Miss P., F.Z.S., M.B.O.U., Park Lodge, Hervey Road, Blackheath, S.E.3. (Orn.)

1927 Barr, Mrs. Margaret, 16, Roland Gardens, South Kensington, S.W.7. (Orn.)
1903 *Battley, Mrs., 21, Creswick Road, West Acton, W.3.
1915 Bayne, Charles S., 4, Museum Mansions, Gt. Russell Street, W.C.1. **(Orn.)**
1926 Benn, Miss A., 68, South Esk Road, Forest Gate, E.7. (Orn.)
1927 Best, Miss M. G. L., F.Z.S., M.B.O.U., 28, Paulton's Square, Chelsea, S.W.3. (Orn.)
1920 Biddiscombe, W., 3, Broadway, Woking, Surrey. (Bot.)
1928 Binning, Miss J. S., Eildon, Florence Road, Sanderstead, Surrey. (Orn.)
1896 Bishop, E. B., "Lindfield," Marshall Road, Godalming, Surrey. (Bot., Arch., Plant Galls, Orn.)
1926 Blackett, Miss F., 196, Cromwell Road, Earl's Court, S.W.5. (Orn.)
1928 Blasson, Miss N., 193, Brondesbury Park, Willesden, N.W.10. (Arch., R.)
1926 Blezard, Miss R., F.Z.S., 89, Eaton Square, S.W.1. (Orn., Bot.)
1921 Blount, W. S., L.R.I.B.A., Tregallas, Harefield Road, Uxbridge, Middlesex. (Arch.)
1925 Boardman, Stuart, "Green Rigg," Friary Lane, Woodford Green, Essex. (Orn.)
1902 Braithwaite, J. O., 18, Warren Road, Chingford, E.4. (Micr., Bot., Ent.)
1910 Braithwaite, Miss N. A., 18, Warren Road, Chingford, E.4.
1929 Brants, Mrs. J. C., The Sheiling Jordans, nr. Beaconsfield, Bucks. (Orn.)
1916 Brown, A., 44, Ravensdale Road, Stamford Hill, N.16. (Orn., Arch., Geol., R.)
1926 Browne, Miss Constance H., 219, Harlesden Road Willesden, N.W.10. (R., Arch.)
1927 Bullard, G. E. S., 253, West End Lane, West Hampstead, N.W.6. (Bot.)
1915 Burkill, H. J., M.A., F.R.G.S., 3, Newman's Court, Cornhill E.C.3. (Plant Galls, Lep., Bot., Geol., Orn., R.)
1926 Burnet, Ian G. W., 80, Blenheim Gardens, Cricklewood, N.W.2. (Orn.)
1928 *Campbell, J. M. H., M.D., 41, Pope's Grove, Twickenham,Middlesex. (Orn.)
1912 Capleton, A., Beaufort House, 37 Lansdowne Road, South Woodford, E.18. (Mam., Orn., R.)
1926 Carr, Miss A. N., 7, Cambridge Road, Watford, Herts. (Orn., R.)
1928 Caulfield, F. W. 21, Gloucester Walk, Kensington, W.8. (Orn.)
1911 Chapman, E., 219, Harlesden Road, Willesden, N.W.10. (Arch., Geol., R.)
1927 Child, Miss E., Ridley House, 113, Gower Street, W.C.1. (R.)
1927 Clanchy, Mrs. B. N., Russell Mansions, 21, Coram Street, W.C.1. (R., Orn.)
1927 Clanchy, D. H.) Russell Mansions, 21, Coram Street, W.C.1. (R. Orn.)
1910 Clark, J. W., "Hazeldene," 10 The Ridgeway, Chingford, E.4. (Bot.)
1928 Clarke, H. T., "The Yews," Godmersham, Canterbury, Kent.
1927 Coates, Mrs. E.F. M., 5, King's Garth, London Road, Forest Hill, S.E.23. (Orn.)
1927 Coates, J. B., 5, King's Garth, London Road, Forest Hill, S.E.23. (Orn.)
1929 Coates, Miss N. H., "Woodhouse," Beaumont Road, Wimbledon Park, S.W.19. (Orn., Bot.)
1904 Cockayne, E. A., M.A., M.D., F.R.C.P., F.E.S., 116 Westbourne Terrace, Paddington, W.2. (Lep., Biol.)

1925 Cocksedge, W. C., 6, Aldersmead Road, Beckenham, Kent. (Orn., Arch.)
1929 Cocksedge, Mrs., 6, Aldersmead Road, Beckenham, Kent. (Arch., Bot.)
1907 Collenette, C. L., F.R.G.S., F.E.S., Gothic Lodge, Woodford Green, Essex. (Ent., Orn.)
1925 Corner, Mrs. D. H., 1, Boundary Road, St. John's Wood, N.W.8. (R.)
1928 Cox, Miss L. E., 72, Corringham Road, Golder's Green, N.W.11. (Bot.)
1929 Cranfield, Mrs. V., Little Tompsetts, Forest Row, Sussex. (Orn.)
1928 Crawford, B. H., B.Sc., 51 Langham Rd., Teddington, Middlesex. (Bot., Ent., Orn., Plant Galls)
1928 Crawford, Mrs. M. H., 51 Langham Rd., Teddington, Middlesex. (Bot., Ent., Orn., Plant Galls)
1927 Cross-Rose, F., Kenmore, 20, Woolstone Road, Forest Hill, S.E.23. (Orn.)
1928 Cuningham, Miss D. W. M., 50 Ladbroke Grove, Notting Hill, W.11. (Orn.)
Cust, Miss Peggy Purcy, 49, West Hill, Highgate, N.6.
1892 Cyriax, R. C., 23, Aberdare Gardens, West Hampstead, N.W.6. (Arch., Aryan question, Indo-European languages)
1920 Dallas, J. E. S., 38, Richmond Road, Islington, N.1. (Orn., Bot.)
1925 Dallas, Mrs. Rosa F., 38 Richmond Road, Islington, N.1.
1922 Davis, E. J., M.I.Mech.E., Milestone, Church Hill, Loughton, Essex. (Orn.)
1926 Deane, Miss M. B. H., 1, Cromwell Place, S. Kensington, S.W.7. (Orn.)
1910 Dell, F. G., 55, Russell Road, Buckhurst Hill, Essex. (Pond Life, Micr., Orn.)
1927 Dolman, L. H., Trinity School House, Blackheath Hill, S.E.10. (Arch.)
1928 Douglas-Smith, Miss K., 86 Boundary Road, St. John's Wood, N.W.8. (Arch., Orn.)
1927 Druce, F., M.A., F.L.S., 7, Culford Gardens, Chelsea, S.W.3 (Bot.)
1927 Dunkerley, Rev. C. L., Laleham Vicarage, Staines, Middlesex. (Arch., Orn.)
1905 Edelsten, H. McD., F.E.S., "Hillside," Lindfield, Sussex. (Lep.)
1928 Emberson, L.M., 49, Adela Avenue, West Barnes, New Malden, Surrey. (Orn.)
1927 Emery, J. W., Windsor Lodge, 450, Upper Richmond Road, Putney, S.W.15. (Orn.)
1927 English, Miss F., 8, Dorville Road, Ravenscourt Park, Hammersmith, W.6. (Orn., Bot., Arch., R.)
1927 Evans, E. B., 86, Emmanuel Road, Balham, S.W.12. (Orn.)
1907 Eynon, Lewis, B.Sc., F.I.C., "Fernleigh," Hall Lane, Upminster, Essex. (Chem.)
1925 Farish, Mrs., "Stapleton," 46 Culverley Rd., Catford, S.E.6.
1927 Ford, H. E., 30, The Common, Upper Clapton, E.5. (Orn.)
1922 Forster, W. C., 40, Nevern Square, Earl's Court, S.W.5. (Arch., R.)
1924 Foster, John B., B.A., "Aldwick," Holland Road, Sutton, Surrey. (Orn.)
1928 Fox, G. J. B., 45, Stanwick Mansions, West Kensington, W.14. (Arch.)
1929 Frewer, Miss M.E., c/o C. R. Pyle, Esq., St. Bartholomew's Hospital, E.C.1. (R., Orn.)
1920 Gamble, Rev. H. J., M.A., 14, Frederica Road, Chingford, E.4. (Arch., Conch.)
1927 Gardiner, Miss L., 14a, St. James Road, Tooting, S.W.17. (Orn., Arch.)

1928 Gauntlett, H. L., F.Z.S., F.E.S., F.R.M.S., F.R.H.S., Howard's Lane, Putney, S.W.15. (Orn.)
1910 Gaze, W. E., 10, The Avenue, Highams Park, Chingford, E.4. (Lep., Bot., Chem.)
1909 Gerrard, V., 38, Campden Hill Court, Campden Hill Road, Kensington, W.8. (Lep.)
1927 Glauert, L., "Killuspy," Chesham Bois, Bucks. (Orn.)
1910 Glegg, W. E., F.Z.S.,M.B.O.U., The House, Albion Brewery,Whitechapel Road, E.1. (Orn.)
1921 Glegg, Mrs., The House, Albion Brewery, Whitechapel Road, E.1. (Orn.)
1929 Goodwin, J. L., "Grodwell," Monkham's Drive, Woodford Green, Essex. (Ent., Orn.)
1927 Green, Roland, F.Z.S., Ruskin Studio, 7, New Court, Lincolns Inn, W.C.2. (Orn.)
1899 *Greenwood, Prof. M., D.Sc., F.R.S., F.R.C.P., "Hillcrest," Church Hill, Loughton, Essex. (Arch., Biol.)
1928 Griffin, Miss M., 22, Addison Way, Golder's Green, N.W.11. (Orn.)
1920 Grinling, C. H., B.A., 71, Rectory Place, Woolwich, S.E.18. (Bot.)
1929 Gulliver, Miss M. D., 249, Ilford Lane, Ilford, Essex. (Orn.)
1927 Hale, R. W., 35, Christchurch Avenue, Kilburn, N.W.6 (Orn.)
1927 Halton, K. E., "Ezbah," Chesham Bois, Bucks. (Orn.)
1903 Hanbury, F. Capel, "Westfield," Hoddesdon, Herts. (Lep.)
1906 Hanbury, Frederick J., F.L.S., F.E.S., Brockhurst,East Grinstead, (Bot., Lep.)
1897 *Hanson, P. J., "Burcroft," Village Road, Bush Hill Park, Enfield, Middlesex. (Orn., Arch.)
1927 Hardiman, Miss A., 1, Avenue Mansions, Park Avenue, Cricklewood, N.W.2. (R.)
1921 Hardiman, J. P., C.B.E., B.A., 1, Avenue Mansions, Park Avenue, Cricklewood, N.W.2. (Orn., R.)
1925 Hart, C., "Chelston," Hillside Road, Pinner Hill,Middlesex. (Orn., Bot.)
1927 Harvey, J. H., "Dallinga," Lower Road, Great Bookham, Surrey. (Bot.)
1910 Heath, G. H., M.A., 7, St. Philip's Road, Surbiton, Surrey. (Lep.)
1926 Hibbert-Ware, Miss A., F.L.S., "The White Cottage," Gillwell Lane, near Chingford, E.4. (Orn.)
Hicks, John B., 99 Barkston Gardens, Earl's Court, S.W.5. (Lep.)
1929 Higgins, Miss E., 38, Queen's Gate, S. Kensington, S.W.7. (Orn.)
1919 Horn, P. W., Stepney Borough Museum, 77, Whitechapel High Street, E.1. (Orn., Aquaria)
1905 Hornblower, A. B., 91, Queen's Road, Buckhurst Hill, Essex. (Api, Arch., Orn., R.)
1910 Howard, D. Lloyd, J.P., F.I.C., F.C.S., Pettits Hall, Chigwell, Essex. (Chem.)
1927 Hussey, H. T., 416, High Road, Leyton, E.10. (Arch., Orn., R.)
1927 Jago, R. P., F.Z.S., "Rookwood," Bridle Road, Eastcote, Middlesex. (Orn.)
1927 Jeffery, H. J., A.R.C.Sc., F.L.S., 14 Coppetts Road, Muswell Hill, N.10. (Bot.)
1926 Jehan, Kenneth C., 49, Bruce Grove, Tottenham, N.17. (Bot.)
1927 Johnson, A. E., 49, Clinton Road, Mile End, E.3.
1928 Joicey, J. J., F.L.S., F.Z.S., F.R.G.S., F.E.S.,The Hill, Wormley, Surrey. (Lep.)
Jones, Jock Ll., 1 Boundary Road, St. John's Wood, N.W.8. (R.)
1899 *Kaye, W. J., F.E.S., "Caracas," Ditton Hill, Surbiton, Surrey (Lep.)
1928 Kingsbury, A. W. G., 24, Bina Gardens, Earl's Court, S.W.5. (Orn.)
1925 Korner, Miss Theodora, 4, Gunterstone Road, West Kensington. W.14. (R.)

1928 Lambert-Lack, H., M.D., F.R.C.S., 31, Marlborough Place, St. John's Wood, N.W.8. (Orn.)
1928 Lambert-Lack, D., 31 Marlborough Place, St. John's Wood, N.W.8. (Orn.)
1929 Lamb, Mrs. K. E., "Mildura Cottage," Lymington, Hants. (Orn.)
1927 Lane, J. H., 571/3, Commercial Road, E.1. (Chem.)
1928 Lee, Miss M., 22, Addison Way, Golder's Green, N.W.11. (Orn.)
1928 Leech, T., 33, First Avenue, Bush Hill Park, Enfield, Middlesex. (Bot., Orn.)
1922 Lemon, F. E., M.A., LL.B. (Cantab.), J.P., C.A., "Hillcrest," Redhill, Surrey. (Orn.)
1922 Lemon, Mrs. M. L., M.B.E., J.P., M.B.O.U., F.Z.S., "Hillcrest," Redhill, Surrey. (Orn.)
1919 Leyton Public Libraries, per the Librarian (E. Sydney, F.L.A.), Central Library, Leyton, E.10.
1927 Lister, Miss G., 871, High Road, Leytonstone, E.11. (Orn.)
1926 *Littlejohn, H. A., 93, Carlyle Road, Manor Park, E.12. (Orn., Bot.)
1926 Longfield, Miss C. E., F.R.G.S., F.E.S., F.Z.S., 20, Pont Street, S.W.1. (Orn., Ent.)
1919 Lowne, B. T., "Ravenscroft," 129, Bromley Road, Catford, S.E.6. (Bot.)
1928 MacAlister, Mrs. E., 10, St. Albans Road, Kensington, W.8. (Orn., Bot.)
1927 McArthur, Mrs. I., 48, Grosvenor Road, S.W.1. (Orn., Bot., Arch.)
1911 MacIntosh, Miss I. S., 69, Windmill Hill, Enfield, Middlesex. (Bot.)
1911 MacIntosh, Miss J. D., 69, Windmill Hill, Enfield, Middlesex.
1923 *Macpherson, A. Holte, F.Z.S., 21, Campden Hill Square, Kensington, W.8. (Orn.)
1927 Main, Miss M., 55, Buckingham Road, S. Woodford, E.18. (Ent., Orn.)
1923 Mann, Edward, 10, Frankland Road, South Chingford, E.4. (Pond Life, Orn.)
1928 Mason, A. J., F.R.S.A., 112, Drakefield Road, Tooting, S.W.17. (Arch.)
1927 Mason, Miss J., Eynsham Hall, Witney, Oxon. (Orn.)
1927 Mellows, C., M.A., F.E.S., School House, Bishop's Stortford College, Herts. (Bot., Ent.)
1887 Mera, A. W., 5, Park Villas, High Road, Loughton, Essex. (Lep.)
1929 Middleton, A. D., University Museum, Oxford. (Zoo.)
1926 Mitchell, Miss E., 29, Aberdeen Road, Wealdstone, Middlesex. (Bot.)
1924 Moore, Miss A. E., 44, Carlton Avenue, Kenton, Middlesex. (Orn.)
1927 Moore, Miss F., Downshire House, Roehampton, S.W.15.
1905 Moore, J. E., 6, Alwyne Villas, Canonbury, N.1.
1927 Moss, Miss M. B., 21A, Muswell Avenue, Muswell Hill, N.10. (Bot.)
1927 Mounsey, D. J., 5, Harewood Road, South Croydon, Surrey. (Orn., Ent.)
1928 Murphy, Miss H., 43, Stafford Row, Bow, E.3. (Bot., Orn.)
1926 Niblett, Montague, 10, Greenway, Wallington, Surrey. (Ent., Plant Galls.)
1893 *Nicholson, Miss B., "Rothbury," Langdon Road, Upper Parkstone,, Dorset. (Bot.)
1928 Noel, Miss E. F., 37 Burnham Court, W.2. (Bot., Orn.)
1925 Norman, Cecil, F.L.S., 55, Eccleston Square, S.W.1. (Bot., Orn.)
1926 *Oldham, Charles, F.L.S., F.Z.S., M.B.O.U., "The Bollin," Shrublands Road, Berkhamsted, Herts. (Bot., Orn., Conch.)
Page, Miss M. M., 19 Hainthorpe Road, West Norwood, S.E.27. (Orn.)
1924 Palmer, Miss Fanny, 8, Ulundi Road, Blackheath, S.E.3. (Arch.)

1928 Palmer, R., F.E.S., F.Z.S., "Standeford," Baldock Road, Letchworth, Herts. (Ent., Orn., Plant Galls, Pond Life, R.)
1925 *Parmenter, L., 8, Titchborne Street, Paddington, W.2. (Orn.)
1921 Parsons, S. T. T., 10, Ashburn Gardens, South Kensington, S.W.7. (Orn.)
1922 Patterson, Dr. R., F.L.S., M.R.I.A., 7, The Crest, Berrylands, Surbiton, Surrey. (Orn.)
1922 Payne, C. H., 13, Kidderpore Gardens, Hampstead, N.W.3. (Orn., Arch.)
1923 Payne, E. M., "Riseholme," Minterne Avenue, Southall, Middlesex. (Bot., Orn.)
1901 Payne, H. T., 70, Castlewood Road, Stamford Hill, N.16. (Lep.)
1923 Payne, L. G., 22, Marksbury Avenue, Richmond, Surrey. (Bot.)
1922 Pethen, R. W., 108, Northwold Road, Upper Clapton, E.5. (Orn., Ent.)
1927 Phillips, D. M., F.Z.S., 146, Bishopsgate, E.C.2. (Bot., Ent., Geol.)
1927 Piper, Miss G. E. M., 12, Elms Road, Clapham, S.W.4. (Orn.)
1925 Poock, Sydney G., 17, Green Moor Link, Winchmore Hill, N.21. (Orn.)
1928 Poole, A. C., 42, The Mall, Ealing, W.5. (Orn., Bot.)
1910 Pratt, W. B., 10, Lion Gate Gardens, Richmond, Surrey. (Lep.)
1892 Prout, L. B., F.E.S., 84, Albert Road, Dalston, E.8. (Lep., Biol.)
1929 Pugh, Miss E. C., The Hill Farm, Stockbury, Kent. (Orn.)
1927 Raikes, Miss D., 9, Launceston Place, Kensington, W.8. Arch., Bot., Orn.)
1926 Rankin, The Hon. Lady, Kensington Palace Mansions, De Vere Gardens, Kensington, W.8. (Orn.)
1925 Richardson, Arthur, Barrowell Green, Winchmore Hill, N.21. (Orn).
1928 Richardson, G., 74 Tulse Hill, Brixton, S.W.2. (Bot.)
1922 Robbins, J. C., F.E.S., "The Rosery," Limpsfield, Surrey. (Bot., Arch., Ent.)
1892 Robbins, R. W., "The Rosery," Limpsfield, Surrey. (Bot., Lep., Orn., Arch.)
1893 Robbins, Mrs., "The Rosery," Limpsfield, Surrey. (Bot., Arch., Orn.)
1924 Robertson, Lady Dorothy, 66, Park Street, Grosvenor Square, W.1. (Orn.)
1910 *Ross, J., 18, Queen's Grove Road, Chingford, E.4. (Bot., Plant Galls, Orn.)
1890 Routledge, G. B., F.E.S., "Tarn Lodge," Headsnook, Carlisle, Cumberland. (Lep. Col. Hem.)
1923 Sagar, H., Holly Hill Farm, Botany Bay, Enfield, Middlesex. (Orn., R.)
1929 Sampson, E. S., "Thursley," Court Road, Banstead, Surrey. (Orn.)
1895 Shaw, V. Eric, "Betula," Park View Road, New Eltham, S.E.9. Hym., Lep., Micr., Api.)
1929 Sheldon, Rev. L. Gordon, M., Emmanuel Vicarage, Northwood, Middlesex. (Orn.)
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NOTE.—The following abbreviations are used in the above lists:—Api., Apiculture; Arch., Archaeology; Ast., Astronomy; Biol., Biology; Bot., Botany; Chem., Chemistry; Col., Coleoptera; Conch., Conchology; Dipt., Diptera; Ent., Entomology; Ethn., Ethnology; Geol., Geology; Hem., Hemiptera; Hym., Hymenoptera; Icht., Ichthyology; Lep., Lepidoptera; Mam., Mammalogy; Micr., Microscopy; Neur., Neuroptera; Orn., Ornithology; Orth., Orthoptera; Ool., Oology; R., Ramblers Section; Rep., Reptilia; Zoo., Zoology. * Signifies a Life Member.

Obituary.

MR. J. Riches who passed away in September, aged 80, was one of the seniors of the Society, joining it as far back as 1891. Until the last four or five years he was a regular attendant at the meetings, and a frequent exhibitor. He took a considerable interest in *Abraxas grossulariata*, and his efforts in breeding the larvae were rewarded by a wide range of varieties of the perfect insect. He retained his interest up to the end, and only last season had bred out a series of black varieties of *Lycia hirtaria*. By profession a horticulturist, he filled the position of head gardener at Hornsey Rise. He had just retired, receiving a handsome honorarium from his employer at the time, when as he returned from a short visit in Kent he took a chill and, after a very brief illness, passed away. He was liked by all who knew him.

THE very sudden death of Mr. C. A. Cook removes from amongst us a forceful personality, who with no claim whatever to be called a scientist was yet a most keen field naturalist, with an almost uncanny intuition for finding a rare plant reputed to occur in a given neighbourhood. For many years he was associated with the Woking and Godalming Natural History Societies, and so became known to several of our members on rambles to the south-west of our district. Two years ago he joined the L.N.H.S. taking a lively interest in the affairs of the Society whenever he could attend the meetings and outings. Kindly memories of him will remain in the thoughts of those who have enjoyed his company upon many a pleasant Surrey ramble.

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† **M. maritima**, R. Br. *Virginia Stock.*

Found by L. B. Hall, F.L.S., in 1920, at Dagenham in div. 12

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127. **S. Thalianum**, Gay. *Wall Cress.*

All divisions except 10, 11, 14, 15, 16, 21, 23, 24.

128. **S. officinale**, Scop.

All divisions.

129. **S. pannonicum**, Jacq.

2. Rickmansworth. 3. Hayes. West Drayton. 4. Between Denham and Uxbridge. Between Northolt and Southall. 5. Warren Gate. 9. Monkhams, Woodford. Wanstead Gravel Pit. 12. West Thurrock. Purfleet. Dagenham. 16. Waddon Marsh. 19. Oxted. 21. Crossness. Possibly some of above should be under *S. Columnae*, Jacq.

131. **S. Sophia,** Linn. *Flix-weed.*

3. West Drayton. 4. Mill Hill. 6. Winchmore Hill. 9. Theydon. Debden Bridge. 12. Grays. Dagenham.

133. **S. Alliaria,** Scop. *Hedge Garlic.*

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† **S. Loeselei,** Linn.

Hendon, div. 4.

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134. **E. cheiranthoides,** Linn. *Treacle Mustard.*

Found in divisions 1, 2, 3, 5, 7, 9, 10, 11, 12, 13, 18.

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136. **C. sativa,** Crantz. *Gold of Pleasure.*

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† **B. juncea,** Coss.

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12. Grays. Purfleet. 17. Wallington. N.W. of Betchworth Station. 22. Bean, near Darenth.

Var. *Babingtonii,* Syme.

1. Iver. 2. Rickmansworth. 3. Southall. Hayes. 4. Hendon. 8. Silver Street. 9. Hale End. Chingford. 12. West Thurrock. Grays. 13. West Molesey. 20. Charlton. Bickley.

CAPSELLA, MEDIK. 44.

151. **Bursa-pastoris,** Medik. *Shepherd's Purse.*

Found in all divisions, usually in abundance. (No worker has attempted to segregate the numerous varieties).

CORONOPUS, HALL. 45.

152. **C. didymus,** Sm. *Lesser Swine's Cress.*

3. East Bedfont. Stanwell. 6. Palmer's Green. Southgate. 13 Little Heath, Oxshott. 19. Limpsfield Common. 21. Crossness.

153. **C. procumbens,** Gilib. *Swine's Cress.*

All divisions except 14, 16, 21, 24.

LEPIDIUM, LINN. 46.

155. **L. ruderale,** Linn.

Recorded from divisions 1, 3, 4, 5, 6, 7, 8, 9, 12, 13, 19, 20, 21. Apparently most common in 3 and 4, and infrequent S. of the Thames.

157. **L. sativum,** Linn. *Garden Cress.*

Recorded from divisions 5, 7, 9, 11, 12, 15.

158. **L. campestre,** Br. *Mithridate Pepperwort.*

1. Near Uxbridge. Langley. Dromonagh (Iver). 3. Hayes. 4. Hendon. Harefield. 6. North Acton. 7. Enfield. 9. Coopersale. 11. Little Warley. 12. Rainham. 17. Headley Lane. Chipstead. 19. Between Moorhouse and Titsey. Limpsfield. 20. Bickley.

159. **L. [heterophyllum,** Benth.**]**

VAR. *canescens,* Gren. and Godr.

1. Near Iver Heath (abundant in one place). Near Uxbridge. 9. Epping. 12. Chadwell,

160. **L. Draba,** Linn.

1. Langley. Colnbrook. 3. Hayes. Hanwell. West Drayton. Between Frogmore Green and Southall Green. 4. Kingsbury. Near Uxbridge. 6. Oakleigh Park. Chiswick, near Barnes Bridge. 7. Rye House. 8. Chingford Marsh. Clapton. 12. Purfleet. 14. By R. Thames, near Barn Elms. 17. Colley Hill, Reigate. 20. Near Honor Oak Park. Bickley. Brockley. West Wickham. St. Paul's Cray. Near Orpington. 28. Northfleet. 22. Between Dartford and Darenth. Southfleet.

(The apparent reluctance of this enterprising colonist, so common in Kent, to invade Surrey is very curious).

THLASPI, LINN. 47.

161. **T. arvense,** Linn. *Penny Cress.*

All divisions except 13, 14, 16, 18, 21, 24.

TEESDALIA, BR. 49.

166. **T. nudicaulis,** Br.

13. Near Weybridge.

BUNIAS, LINN. 52.

169. **B. orientalis,** LINN.

4. Hendon.

† RAPISTRUM, TURN.

†. **R. orientale,** DC.

Found in 1906 at West Drayton, div. 3.

RAPHANUS, LINN. 55.

172. **R. Raphanistrum,** Linn. *Wild Radish.*

Recorded from divisions 1, 2, 4, 5, 6, 7, 13, 18, 19, 20, 22, 23.

7. RESEDACEAE.

RESEDA, LINN. 56.

174. **R. alba,** Linn.

9. Railway bank near Woodford.

175. **R. lutea,** Linn. *Wild Mignonette.*

2. Sarratt. 3. West Drayton 4. Harefield. 6. On railway near Finsbury Park Station (observed for years). 8. Brickfield, Clapton. 12. Thurrocks. 16. Railway bank, near New Cross. 17. Wallington. Fetcham Downs. Headley. Mickleham Downs. Buckland Hills. Reigate. 18. Above Oxted. 20. Chislehurst. 21. Northfleet. 23. Leaves Green.

176. **R. Luteola,** Linn. *Dyers' Weld.*

All divisions except 9, 10, 13, 15, 16, 19, 22, 23, 24.

8. CISTACEAE.

HELIANTHEMUM, MILL. 57.

179. **H. Chamæcistus,** Mill. *Rockrose.*

2. Rickmansworth. Sarratt. 20. Chislehurst. Crofton. 24. Near Westerham. Common in divisions 17, 18, 23.

9. VIOLACEAE.

VIOLA, LINN. 58.

181. **V. odorata,** Linn. *Sweet Violet.*

Not recorded from divisions 1, 5, 6, 10, 11, 13, 16, 21, 22.

VAR. c. *dumetorum*, Jord.

Recorded from divisions 7, 8, 9, 17, 19, 20, 23, 24.

182. **V. hirta,** Linn. *Hairy Violet.*

2. Croxley Mill. Chandlers Cross. Sarratt. 4. Whitchurch Common. Sandy Lodge. 7. Wormley West End. 19. Oxted. 20. Chislehurst. 22. Near Eynsford. 24. Near Westerham. Common in divisions 17, 18, 23.

× *V. odorata*

This hybrid has been found at 22. W. of Eynsford. 23. Maplescombe.

183. **V. calcarea,** Gregory.

17. Mickleham Downs. 23. Maplescombe, near Eynsford.

184. **V. palustris,** Linn. *Marsh Violet.*

1. Black Park. 6. Hampstead Heath. 13. Esher Common. Oxshott Heath. 19. Reigate Heath. Moorhouse, near Limpsfield.

BRITISH
MUSEUM
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NATURAL
HISTORY.

London Natural History Society

THE SOCIETY is an amalgamation of the City of London Entomological and Natural History Society, founded in 1858, and the North London Natural History Society, founded in 1892.

Meetings are held on the First and Third Tuesdays in each month, in Hall 40, Winchester House, Old Broad St., E.C.2. The room is open from 6 p.m. to 9 p.m., and meetings begin at 6.30 p.m. punctually, unless other arrangements are announced.

The **Chingford Local Branch** meets at the Avenue Café opposite Chingford Station, at 8 p.m., on the Second Monday in each month.

At these meetings specimens in various branches of Natural History are exhibited, and papers on various subjects are read and discussed. Visitors are cordially welcomed on the introduction of a member of the Society.

The Minimum Annual Subscription for Members is 7s. 6d., and for Associates 2s. 6d. Each Member is entitled to one copy of "The London Naturalist" free; extra copies can be purchased by Members at two thirds of the published price. All Subscriptions become due on January 1st., and should be sent direct to the Treasurer. Members elected after October 1st pay no Subscription for the year of their election.

New Members and Associates pay an entrance fee of 2s. 6d.

The Subscription is fixed at as moderate a sum as is possible, having due regard to the proper maintenance of the Society and its work, in order that all may avail themselves of the benefits offered. The Society therefore looks with confidence for the support of all who are interested in the study of Natural History.

Further information may be obtained from the Secretary.

Murray & Co., 180 Brompton Road, S.W.3